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*Illustrated.

King Vianna's Latest Overthrow.

THE sensation of the month in the rubber market has been the reported collapse of the ambitious attempt of Baron de Gondoriz to corner the world's supply of rubber, and to dictate the price which every buyer should pay for it. News-gathering is not easy work in any channel yet discovered by the journalist, and it may be that all the "ins and outs" of the so-called rubber failure have not yet been ascertained. It must be remembered that the distance between Pará and New York is so great, and the facilities for communication are so meagre, to say nothing of the difference in methods of thought and business methods between the two countries, as to militate against a perfect understanding at this point of what the daring young Portuguese speculator is doing, or how far he really is a factor in recent movements in the price of rubber. But Pará and New York are not alone involved; this new Napoleon of the Rubber Market includes London and Paris and Lisbon in his calculations, and attempts to place the rubber markets of every land beneath his control.

It is safe to predict that not even the Baron himself understands the whole situation, for in commercial affairs as well as in politics the whole current of business sometimes gets beyond the reputed leader so far that he loses his own bearings, leaving him perhaps to come up at the rear-end of the procession. Whenever things go as a would-be leader wants them to go, it is an easy matter for him to get the reputation for having brought about the result. This is what is the matter with Vianna, if we may drop, while talking business, his honorary title. The price of crude rubber has been in an upward direction for more than a year, in spite of the more than usually heavy crops gathered. It was going up before Vianna gained any important position with regard to the market, and it yet remains to be shown whether he really has sold any rubber this year at a higher price than that prevailing before he began trying to dictate prices. He did, it is true, ask higher prices for a part of his holdings, but asking and selling prices are widely different factors in the market. The news of the failure of Vianna created a brief panic, unsettling the market, while traders took time to find out what was the matter, but in the reaction which followed prices climbed back at once to a figure so high as to create doubts in some minds as to whether Vianna is not, after all, merely "possuming," instead of having failed.

The editor of THE INDIA RUBBER WORLD used as a text for an article in the issue of last February a pointed remark of a leading New York rubber-man which is worth repeating now, viz.: "When rubber goes up it must come down again." When men of the Vianna type are able to buy or rent all the India rubber trees, they may be able to fix the price of the crude gum for all buyers. Meanwhile all that they can do to inconvenience buyers of rubber is to put up prices rather steep when one happens, through carelessness or otherwise, to let his stocks run down in the middle of a busy season. Our manufacturers have learned to appreciate this fact, however, and they are not likely soon to be so short of stocks in a time of need as to be forced to

pay tribute to any crude-rubber monopolist for many months at a time.

The Baron de Gondoriz is a picturesque figure in the rubber market whose brilliancy as a manipulator we should be far from disputing. The degree to which he has made his influence felt in past attempts upon rubber prices has been calculated to enthuse a far less sanguine mind with an aspiration to go still further. The burnt children of the rubber trade, however, have learned to dread the fires of his kindling, and they are not disposed again to come within his power. It is strange that some considerations of this sort have not made the Rubber King more prudent in his later ventures.

A Market for Rubber Goods in France.

A GENERAL impression prevails that foreign rubber factories are fully able to furnish any goods that are consumed in their own countries; that the market for American goods is a limited one. Recent advices from France, however, seem to show that with a little cultivation quite a market could be found there for a variety of rubber goods of American manufacture. For instance, there are in France a great many rubber factories that make druggists' sundries, the variety of goods made being as large or larger than is produced in the United States. In consequence these mills use large quantities of hard rubber in a variety of forms; and strange though it may appear, none of this hard rubber is manufactured in France. A portion of what they use is purchased in England, but the greater part of it comes from German manufacturers. Now the French manufacturers frankly admit, all things being equal, that they would rather buy their supplies from America. Of course there are dealers in this country who import rubber articles of certain grades from Germany, and they will at once exclaim that American manufacturers cannot meet the prices quoted by our German cousins. This, however, holds true only in certain grades of goods; in the vast majority of hard-rubber goods made, with the machinery that American manufacturers possess, there is no doubt but they can compete in price and quality with manufacturers in any part of the world. It looks, therefore, as if it would be wise for progressive firms to examine this new market, and, if it is worthy of their attention, to put their goods in there at once.

Another kind of rubber largely used in France, of which not a pound is manufactured in that country, is what is known as "cut sheet." Various mills have tried to make it, but in almost every instance they have failed. As this cut sheet is used by a great many small concerns in many parts of Europe for the manufacture of gas balloons and a variety of smaller articles it seems hardly possible that the secret of its manufacture can be kept by the two concerns in England who to-day manufacture it. According to oral tradition this cut sheet is made something after this manner: The best Pará rubber is put into a masticator, and very carefully massed. It is then taken out and allowed some little time to season; after which, being

warmed a little, it is put into a heavy press, where, by hydraulic pressure, it is formed into huge circular cakes which are frozen and then cut into thin sheets by a swiftly revolving knife. If there is money in this sort of work, there is little doubt but American rubber-manufacturers can do it and will do it in the near future.

Rubber Goods Not to be Cheaper.

THE recent flurry in prices of crude rubber must not be expected to affect, to any considerable extent, the prices of manufactured goods. To begin with, while it is a fact that the ruling price of crude rubber is much lower to-day than the highest figure reached during the summer, it must be remembered that no large quantities of rubber were bought by the mills at the high prices quoted. Those were prices at which holders of rubber offered it to the trade—not prices paid by makers of rubber boots and shoes and clothing and mechanical goods. Fortunately for the manufacturers they had invested at such a time as to secure ample stocks at not unreasonable figures. The selling prices of their products have been based upon this low-priced raw material, and not upon crude rubber at a dollar a pound. A decline in Pará gum, therefore, is not likely to be followed by lower manufactured goods. On the contrary, had the rubber "corner" been maintained until the mills were really forced to buy in large quantities at the dollar figure, less favorable discounts on their price-lists would have been necessary to save them from loss.

American Firms Can Gather Rubber.

THE neglect of the crude-rubber industry by American capital is generally regarded as due to some natural obstacle to the success of the otherwise irrepressible Yankee in that trade. In an article on rubber-gathering in Nicaragua, in another part of this paper, however, it will be seen that several New York firms have long been successfully engaged in carrying on a trade in crude-rubber with that country, beginning with the outfitting of parties for tapping the trees. While the methods of rubber-gathering vary with nearly every country in which the gum is produced, the variance is not so great as to make it reasonable to suppose that while American enterprise can succeed in this industry in Nicaragua it cannot succeed on the Amazon.

Everywhere natives must be employed to tap the trees, owing to the difficulty with which foreigners become acclimated in rubber-growing countries. Besides, native labor costs less than any that could be imported. But foreign capital is requisite, and, for the most part, foreign business and financial skill. It remains to be shown that, in this respect, our enterprising Americans are lacking as compared with English or German or other nationalities. The true solution of the absence from the great rubber-fields of American houses is due to the general disposition of our business men and capitalists to confine their endeavors to developing the unrivaled fields for enterprise to be found nearer home. It must be remembered that while in most

European countries every field for business has been developed, making foreign outlets a necessary condition for any expansion of trade, the people of the United States still find at home an opportunity for wide growth in every branch of industry and trade.

Thus, while we buy more crude rubber than any other nation of people, the home consumption is so great as to keep pace with the most rapid strides made in manufacturing. This condition seems likely long to continue. The manufacture of rubber, by the way, giving employment to skilled labor, capable of being conducted at short range by proprietors and owners, and yielding less precarious profits than rubber-gathering, is better suited to the disposition of our people, who insist upon certain and immediate profits as an incentive to exertion in any direction. Reasons may appear, however, to make American investments in rubber-gathering a desirable factor in the trade, and it is interesting to be assured that success has been met with in this line, even though it be only in the less important fields of Nicaragua.

From New York to Para Direct.

COMMUNICATION with Brazil is likely to receive an impetus from the opening of a direct cable line connecting the eastern South American coast with the United States, the first message over which reached New York on September 7. Heretofore all cable messages to or from Brazil had to pass twice under the Atlantic ocean, or, what was even less satisfactory, across the South American continent, including the snow-capped Andes. High cost, delays and errors were features of all such communication. The new line will require a short time to get into working order, but its advantages on the score of directness cannot fail in time to be appreciated. At present the schedule of rates offers no advantage over the old lines, but an early marked reduction is probable. This new enterprise may be regarded as another step in the closer commercial relationship between the North American and South American republics which now seems likely to extend until New York shall displace London as a clearing-house for settling balances for trade between Americans on American soil. From our National standpoint there would be greater cause for satisfaction if the new cable line were under American rather than French control. However, if we have been pushing our Brazilian trade on English steamships, through the hands of German merchants, the fact that Frenchmen are to handle our cable messages need not be seriously objected to.

THE Park Place horror in New York reveals two recipes in rubber manufacture more or less known and doubtful in application. According to two statements made indiscriminately by witnesses and occupants, rubber cement is made of gutta-percha soaked in naphtha, and bronze powder is made of India rubber dissolved in the same liquid. In addition to these taxing duties of the liquid in question an effort was made to prove that this inflammable substance set the building on fire, blew it up, and so on. Rubber seemed to be nowhere in its ubiquitousness this time.

India Rubber Heels for Walking Shoes.

TO THE EDITOR OF THE INDIA RUBBER WORLD: My attention has been called by a friend to an article in your number of July 15 regarding elastic shoe-heels. I do not believe it is your disposition to ventilate the softening brains of inventive cranks, but I am inclined to think you will recognize merit in anything pertaining to inventions in rubber.

On April 20 of this year it was my good fortune to have granted me a patent on an elastic heel, six months' practical use of which on thousands of pedestrians in this city has proven it to be an unqualified success. I use leather on the bottom of the heel on account of its superior wearing qualities, and from the fact that in wet weather rubber is very slippery on smooth stone flagging; then too, when the heel is implanted on the pavement, the elasticity is diffused over the whole of the rubber pad, and the reaction, when the foot is lifted, is more appreciable than in a solid rubber heel or a heel having a piece of rubber on the bottom. The strength of this patent lies in the peculiar arrangement of nailing the heel, so as to at once allow full elasticity and give an absolutely solid and secure heel to stand the twists, shakes and strains to which it is subjected. I have found the following favorable results from the use of my device: An absolutely noiseless tread (as far as the heel is concerned), complete relief from the shock of walking, and an erectness of carriage caused by the more natural step, and economy of 75 per cent. in the wearing off of the heel, and longer durability from the relief of the strain on the shoe. I take some pleasure in the fact that specialists in nervous troubles have made my device a frequent prescription.

I have no Eastern connection as yet excepting John Wanamaker, Philadelphia. My invention was not the result of study, but an idea occurring to me in a long, fatiguing walk, and originally I used my device solely for my own convenience; an intimate friend suggested a patent, which, I am glad to say, has been well received, and has in its early youth softened many millions of footsteps. Yours very truly,

WALTER B. MANNY.

St. Louis, Mo., September 8, 1891.

Silk Rubber Veiling.

THE new fashion plates issued by the Stoughton Rubber Co., of Boston, Mass., are among the most attractive that have yet reached the office of THE INDIA RUBBER WORLD. Of especial interest in the set is a plate illustrating their "silk rubber veiling," adapted to protection of ladies' hats or bonnets in damp or wet weather, and equally desirable in country or city. From a sample of this veiling which accompanies the plates it is evident that a remarkably fine rubber texture in silk has been produced. It is not inaptly described as being "light as a zephyr," while it is beautiful in appearance. The Stoughton Rubber Co. also send out a plate representing the Getz Arm Stay, which they control in America.

SUCCESS in business is never a result of accident.

Collapse of Vianna's "Corner."

THE ambitious rubber movement with which the name of Vianna has been connected so conspicuously for some months past, resulting recently in a collapse, began to take shape in the latter end of 1890. Brazil at that time, by reason of a prosperity born of a large coffee crop which it was able to sell to the world at high prices, was ripe for the formation of mammoth companies controlling immense sums of capital. The manipulation of the rubber market seemed full of possibilities, and the Baron de Gondoriz, with an intimate knowledge of a business which, as he tersely said a few weeks ago, was the only thing that he knew, was able to obtain means sufficient to carry out plans of control of which he had dreamed for years. With his brother and father-in-law, also men of no ordinary ability, he succeeded in forming two companies with a capital ordinarily estimated at \$17,500,000. That this capital was overstated is apparent in view of recent events. The next thing to do was to buy all the rubber coming into Pará, which proved a difficult thing to do, as he immediately made enemies of nearly a score of well-established houses in Pará and Manaus, who naturally would look with animosity upon a movement which might be carried so far as to drive them to ruin. He began also to arouse the ire of the manufacturers in America and Europe, who saw their profits placed in jeopardy by the immensity of a movement against which they might be unable to cope. The price of rubber was forced up somewhat, and the two companies gave out that they would not sell any under \$1 per pound. As manufacturers generally were well stocked there was no immediate necessity of making very large purchases, and the effect was that the stocks of rubber began rapidly to increase.

The elasticity of rubber is well known, though it is hard to say how far a pound of it will go in the hands of a skillful mixer in our factories. Almost every month the cry would come from the secret chambers of the mills that they would be obliged to come into the market very shortly, and consternation was depicted upon the countenance of many a proprietor. But none was bought, and finally the Baron de Gondoriz took it upon himself to take "a little trip to New York for pleasure," bringing the Baroness and a lady friend of hers with him. His idea was to obtain additional capital so that he could protect his market from the effect of small lots which were every little while dribbling out of the hands of weak holders in New York and London, and threatening to rend the fabric which he had so carefully woven. This was in June last. His successes in the way of securing additional capital here were hardly worthy of mention, and he concluded to pass on to London. The stock of rubber owned by him had then reached nearly 3000 tons, at a cost, as he claimed, of about 80 cents. He had now given out that his rubber was for sale at 90 cents, and he argued that his profits at that figure would not be unreasonable.

In London he apparently succeeded in his endeavor. His object there seems to have been to obtain sufficient capital to carry the stocks he held in America and England,

holding them in strong hands so that he would not be worried while he was attending to the handling of large receipts in Pará during the season which has just commenced. To this end he obtained the aid of the Barings and several other capitalists, and his success was believed certain, since he seemed to have a prospect of manipulating the coming crop. But the old adage in Wall Street circles applied to this case: "When stocks look the strongest they are the weakest." The state of the market was a tempting one for the "bears." A break in it meant a fortune. The example of the New York "bears" was followed by the Barings, who had been badly burned in South American affairs and who were not willing to be even scorched this time. Pandemonium ensued. Prices toppled and went down to 68, then 65 and finally to 60 cents, from which point a reaction took place. The 500 tons which the Barings held and which had been shipped from America to them were sold at about 65 cents.

Baron de Gondoriz hastily took his family to Lisbon, and the assertion that his enemies have made that he dare not leave there is so far verified. The news from Pará is meagre and vague but it is understood that only one of the Vianna companies, the Rio Mercantil, has failed, and that for so small an amount comparatively as to cause remark. The failure is for 800 contos, or about \$350,000. The company seems to have lost no time in clearing its decks for action again and has proposed to its creditors that they fund their indebtedness, taking one-half of it in the shares of the company and the rest in debentures due in eight years. However fascinating such a scheme might appear in Brazil it is not one that would appeal to the capitalists in this country or Europe, and the liquidation of the company is considered certain. The larger company, the Empresa Industrial, is in existence but details from Pará are so meagre that it is impracticable to state definitely what can or will be done with that. New York parties who claim confidential relations with Baron de Gondoriz are absolutely without advices, and they claim that current gossip is the silliest kind of guess-work.

The amount of rubber sold out for want of proper margins is yet an unknown factor. It is variously stated at from 1000 to 2000 tons. This of course does not embrace the whole, and the amount held from this time on depends upon the will of the holder tempered by his financial ability. Transactions of course have been immense. Get rubber down to 65 cents and it is a "barbecue" for the speculative fancy of the rubber-man. Suffice it to say that if the little band of speculators in the picturesque city at the mouth of the Amazon have not had enough experience in this transaction and, if they attempt to go on that with a little economy our manufacturers can get along with what they now have until spring.

High prices, by the way, do not always increase the production of rubber. Double the gatherer's wages and he simply gives you half as much rubber. But put up the price inordinately and the mixer studies new compounds, the broker in Centrals and Africans becomes more busy, and the substitute-man flourisheth. There are a great many substitutes for rubber, mostly worthless, but their number

is not by any means decreased with the advance in the crude gum.

The corner of Pará rubber fashioned last winter is undoubtedly at an end.

Views of the Rubber Trade.

IMPORTERS and brokers as a rule do not care to be quoted for publication by name. There is now in New York a diversity of opinion in regard to the future of the rubber market. In all speculative transactions the wary first ask, after a break, who is selling and who is buying. The strength of both parties is taken into consideration and the motives of both carefully analyzed. In the case of the Vianna failure 1000 tons or more have been sold, and all hands are watching to see who is the next seller. Again all hands are on the alert to discern whether the recent sales have not been a ruse to purchase the new crop in Pará at a low price. As a rule manipulators are chary of paying full prices for large supplies, and the largest deals in all products have invariably found a foundation on a demoralized market. It will be several weeks before these contingencies are surely out of the way. This is the consensus of opinion among speculators.

There is more than a gleam of satisfaction among rubber manufacturers with regard to the drop in the crude gum. A Broadway merchant, whose physical appearance is positive evidence that he wagered what he did not need, bet a dinner at Delmonico's that rubber would sell below 70 cents this year. Of course he won, and has enjoyed his repast with the greater satisfaction of knowing what was bound to come did come. Brokers have been very busy. The telephone ring in many an office has been almost continuous; on the street coat-tails have been very much inclined to a horizontal position, and in manufacturers' private offices the bidding and offering has been in turn cool and excited—"A little less by a penny or so," being followed by the "Can't do it," with a suspension. Next a bluff in a turn around the corner to see a phantom customer and then back with an excuse for the consummation of the trade. Manufacturers generally won the day and got what they wanted at about what they thought was right, only to be disgusted with still lower quotations the next day. Then the clerks began to wonder whether there was not a little "spec." for them. Shrinkages were studied, funds counted, Lilliputian syndicates formed, and quite a little was gobbled up for, to the posted man, fine Pará at 60 is a very low price. "What next?" is the watchword now depicted on many an anxious countenance in places where ugly biscuits form the only mantel ornaments.

A. Spadone (President of the Gutta Percha and India Rubber Co.): "I think that the backbone of the attempt to control prices by the Pará syndicate during the coming season is broken. The visible supply of Pará rubber is now very large and a new season is coming on with the usual quantity to be taken care of. All hands will supply themselves out of the rubber that has slipped away from the syndicate, and if the latter attempt to hold the future product for higher prices they will be at a great disadvantage in waiting until we use up what we shall have on hand. I hardly think Vianna is prepared for such a condition of affairs, and believe he will now retire as gracefully as possible from the field. So far as I can judge prices for rubber will be very low this summer. There is a great deal to be absorbed, and holders are pretty tired, and parcel after parcel will come on to the market with the large receipts of the new crop pressing closely upon the old. Consumption will not be rapid enough to satisfy any one save the

bear. We are buying largely at these prices simply because I do not have that peculiar talent of getting in at the bottom, and don't believe I ever will, but I am confident that we shall see much lower prices. So far as prices of manufactured goods are concerned I hardly think there will be any change. We have not advanced prices during this episode in the crude rubber trade. The condition of affairs was such that we were timid in that direction, and felt that it would be more practical to hold our trade even at the expense of a loss in margin in profits. Of course we all feel rather relieved at the turn in affairs which we have been expecting as a natural result for some time."

F. M. Shepard (of the Goodyear Co.): "The Vianna failure will hardly affect prices, as the manufacturers were not anxious under the old price of rubber to extend their contracts. The boot and shoe men had placed themselves in a position where they were unable to advance prices, and were really working at a loss. Of course they now feel easier, and at the prevailing prices there would be a great deal of activity. The cornering rubber is an attractive scheme if one has money enough. The cost of gathering crude rubber varies very little. The native gets as much as he can eat and drink, with a few other necessities. He does not work to obtain fine raiment or an elegant residence, and the luxuries of civilization are an unknown quantity in his life. So the cost of obtaining the rubber is a fixed quantity. The world's stocks of Pará rubber run year after year between 1500 and 3000 tons. Consumption is fairly regular, so the speculator has a good idea of what is before him. The reward he is to get is in the price that can be forced upon the manufacturer and still sell the rubber. He must do the latter and not drive the manufacturer to resorting to all sorts of substitutes and makeshifts. The easy time to carry the rubber is, of course, in the summer, when receipts are small. Now his receipts would have commenced to be heavy, and with the stocks in sight the staying power of his associates would have been severely taxed. As in all such schemes a pin drops out at a critical time, and it has done so in this case."

W. S. Ballou (of the Woonsocket Rubber Co.): "I do not suppose any of the boot and shoe manufacturers have been making any money so long as they had to pay the high prices for crude rubber, and of course they have had to pursue their business under a serious handicap. If, however, they can buy rubber at fair prices, there will be no trouble about their doing a large business. When high prices prevail for goods the demand for boots and shoes naturally wanes, and vice versa. The demand for boots and shoes increases every year in a ratio with that of the population, and I think a pretty safe estimate to put upon the consumption of rubber for that purpose is 18,000,000 pounds. The rubber used is fine Pará, chiefly with some 'thimbles,' and perhaps Central American scrap. If we used fine Pará altogether, we would have a shoe like the old gums we used to see in our grandfathers' days, and if we used inferior rubber we would have a roughness about the shoe which would be a tell-tale on us at once. Fine Pará just as much as is practical is the cheapest in the end, better to handle, with not so much loss in it from shrinkage, and what is of more consequence, it will give better satisfaction. So the price of fine Pará is a great factor in the trade. The outlook for business this year is most excellent. I have been to Chicago lately and there was every sign of a prosperous season there. 'Large crops' is getting to be a hackneyed subject, but such a factor never fails in its returns. We are doing a little better business in the South every year, and our export business is excellent. This last business requires much care, for it causes a frequent change of lasts and

patterns. The factories are running full handed, and now the rubber matter is settled we all expect as bright a season as we have had for many a year."

* * *

Capt. W. L. Candee (President of the International Okonite Co.): "The use of rubber in insulation is a growing one in this country, and on my recent trip to Europe, I could not but help observe that there was a disposition there to use it as an alternate for gutta-percha. Gutta-percha is becoming very scarce, and is subject to extremes of temperature, becoming soft in warm weather and brittle in cold, which is not the case with our okonite. Following this idea high prices for rubber are apt to affect us, for, of course, we must charge more if we pay more for the raw material. Those people who know the value of our goods will of course pay the higher price, but we have competing insulating materials. In compounds there is an endless variety of modes and methods and the state of the industry is such that an inferior insulator can be made to look as well as the best, and the deceit will not be detected only by several months of actual use. With a high price for rubber the incentive to reduce the value of these compounds is ever present, but with low prices this sort of competition becomes a minimum one, and we are subjected to very little annoyance from it. There is also some difference in the quantity of the demand for goods when they are high-priced. All in all, a fair price for rubber is of great benefit to the multitude and the recent drop is hailed on all sides with genuine satisfaction."

* * *

John H. Cheever (President of the New York Belting and Packing Co.): "Remember there are some big holders who have not unloaded their rubber, and it is not safe to be sure as to their intentions. They hold a great deal of rubber. It is hardly safe to guess in a public way what will happen. Wait until after election,—not that that event has any significance in this case save that it marks a date which will give time for events to more clearly shape themselves."

A Victory for Rubber-Cloth Importers.

SOME time ago J. Mandleberg & Co., of England, in order to test the new tariff law which placed the duty on cloth in which rubber was incorporated so high as to lead to the belief that it would be prohibitory, imported some goods into this country. *Capt. T. S. Sharret*, one of the General Appraisers has given an opinion which will be of interest both to importers and manufacturers. After the usual preface the opinion reads:

"The merchandise consists in part of plaid, cotton cloth heavily proofed with a preparation of India rubber, cotton chief value, and two different patterns of plaid cotton cloth stuck together with prepared India rubber, making what is known as a double texture. In this fabric cotton is also a component material of chief value. Both of the above described textiles were returned as manufactures of cotton 'not specially provided for' under paragraph 365 of the act of October 1, 1890, in accordance with the principles contained in the decision of the United States Circuit Court in the case of *Schneider v. Arthur*, Synopsis 4565, June 7, 1880.

"The importer claims that India rubber is a component of chief value in this merchandise. In his petition he has evidently omitted to take into account the adulterations of India rubber and the chemicals used to soften it so that it could be applied to cotton-cloth. He has omitted to distribute the cost of the labor employed in applying this preparation of India rubber. Adding to the cotton-cloth the pro rata proportion of

cost of such labor, would certainly make the cotton chief value. This merchandise resembles cotton-cloth more than it does manufactures of India rubber. If it resembles equally cotton-cloth and manufactures of India rubber, then the assessment should be advanced to the higher or cotton rate as made. [See Sec. 5, Act October 1, 1890.] The balance of the merchandise consisted in part of woolen-cloth and cotton-cloth pasted together with the India rubber preparation so as to make a double texture cloth, and of two qualities of woolen cloth similarly joined together which we return for duty as woolen-cloth, in paragraph 392 act of October 1, 1890. Under this paragraph there is a more specific enumeration than under paragraph 460, inasmuch as India rubber is not a component material of chief value. This merchandise is used in the manufacture of waterproof garments, and attention is directed to the proviso of paragraph 349 for cotton and India rubber-cloth.

"I would also invite attention to the provision for waterproof cloth contained in paragraph 369. The designation of this merchandise is variously made as single texture, double texture, mackintosh-cloth and sometimes waterproof-cloth. The report of the appraiser is given in full, as it contains a description of the merchandise and of the points contained relative to the double character thereof. The importers claim that the fabrics contained in parcels 71 and 72 as designated in the invoice are composed of India rubber and cotton of which materials India rubber is greater in value, and the goods contained in parcels 73 and 74 are composed of India rubber, cotton and wool, in the first of which fabrics India rubber is a component material of chief value, and in the other although admitted that the wool is of more value than the India rubber or cotton, it is held that inasmuch as rubber is a significant part and feature of the goods and substantially controls the classification thereof. Based upon the above claim it is contended by the appellants that the duty should have been assessed upon all of the merchandise at 30 per cent. ad valorem under paragraph 460 of the new tariff.

"A representative of the manufacturers of the goods in question appeared before the board and submitted sworn statements as to the relative value of the different materials entering into the fabrication thereof. Manufacturers of domestic India rubber fabrics were present, and testified as to the value of crude India rubber. A quantitative analysis of samples was made at our request by Dr. Baker, connected with the United States Laboratory at New York. Based upon this analysis the amount of pure India rubber found to be contained in the several classes and kinds of merchandise, when valued at the price per pound fixed by the domestic manufacturers, referred to, tended to confirm the statement of the maker of the goods.

"We therefore find that the fabrics contained in parcels 71 and 72 are composed of India rubber and cotton of which materials India rubber is a component of chief value. That the merchandise contained in parcel 73 is composed of India rubber, cotton and wool and that India rubber forms the component material of chief value thereof, and the goods contained in parcel 74 are composed of India rubber, cotton and wool and in these fabrics the wool constitutes the component material of chief value. We further find that the goods are India rubber fabrics and are not the waterproof-cloth provided for in paragraph 369. We hold that the preparation of the merchandise of which India rubber is a component material of chief value is more specifically provided for in paragraph 460, new tariff, than elsewhere in the act. The protest is accordingly sustained as to the goods contained in parcels 71, 72 and 73 and the action of the collector is confirmed as to the goods contained in parcel 74 of which wool constitutes a component material of chief value."

The opinion of Capt. T. S. Sharretts is substantially that when cloth is imported of which the pure India rubber is the most costly material then the goods are liable only to a low rate of duty. Should the value of India rubber fall below that of any other component part of the fabric then the duty follows the chief value, which in such case would be fairly prohibitory. The value of the rubber must be fixed as to the amount of crude that is found in it. The rubber in this case was valued at 95 cents. Should rubber hold at 60 or 65 cents new complications would arise which could only be met by the foreign manufacturer increasing the amount of crude rubber in the goods. In the sample in question four ounces of crude rubber was found in a yard of cloth 60 inches wide valued at 37 cents. At the present price of rubber the proportion of crude would be perilously low. The importers failed to obtain a favorable opinion in the woolen goods as they did not contain rubber enough to make "a component part." Their plea was in this case that such fabrics had a distinctive feature about them which would class them as rubber manufactures.

They really did not expect to carry this point. They are much elated over a victory which is admitted to be of great importance to them.

Fortunes in Small Inventions.

EVERY little while the newspapers take up the subject of inventions and tell their readers how many have made fortunes out of small inventions. The *Pittsburg Dispatch* gives a list of small things that have made their inventors wealthy. It commences with the pen for shading in different colors, which yields an income of \$200,000 per annum. The rubber tip at the end of lead pencils has already made \$100,000. A large fortune has been reaped by a miner who invented a metal rivet or eyelet at each end of the mouth of coat or trousers pockets to resist the strain caused by the carriage of pieces of ore or heavy tools. In a recent legal action it transpired in evidence that the inventor of the metal plates used to protect the soles and heels of shoes from wear sold upward of 12,000,000 plates in 1879, and in 1887 the number reached 143,000,000, producing realized profits of \$1,250,000.

A still more useful invention is the "darning weaver," a device for repairing stockings, undergarments, etc., the sale of which is very large and increasing. As large a sum as was ever obtained for any invention was enjoyed by the inventor of the inverted glass bell to hang over glass to protect the ceilings from being blackened, and a scarcely less lucrative patent was that for simply putting emery powder on cloth. Frequently time and circumstances are wanted before an invention is appreciated, but it will be seen that patience at times is well rewarded, for the inventor of the roller skate made over \$1,000,000, notwithstanding the fact that his patent had nearly expired before its value was ascertained.

The gimlet-pointed screw has produced more wealth than most silver mines, and the American who first thought of putting copper tips to children's shoes has realized a large fortune. Upward of \$10,000 a year was made by the inventor of the common needle-threader. To the foregoing might be added thousands of trifling but useful articles from which handsome incomes are derived, or for which large sums have been paid. Few inventions pay better than patented toys. That favorite toy, the return ball, a wooden ball with an elastic attached, yielded the patentee an income equal to \$50,000 a year, and an income of no less than \$75,000 fell to the patentee of the "dancing jimcrow."

The invention of "Pharaoh's serpents," a toy much in vogue

some years ago, was the outcome of some chemical experiments, and brought the inventor more than \$50,000. The sale of the little wooden figure, "John Gilpin," was incredibly large for many years, and a very ingenious toy, known as the "wheel of life," is said to have produced upwards of \$100,000 profit to its inventor. One of the most successful of modern toys has been the "chameleon top," the sale of which has been enormous. The field of invention is not only vast and varied, but is open to everybody without respect to sex or age, station or means.

Our Rubber-Buyers' Directory.

THE letter which we append is given as a fair specimen of many which arrive in the mails:

TO THE EDITOR OF THE INDIA RUBBER WORLD: As a reader of your paper, the contents of which highly interest me, I find to-day a description of "Fossil Flour" in your August issue. I should like very much to know where I can buy this flour, and therefore beg you to give me some information in this behalf, if possible. Thanking you before hand, I am, dear sirs, yours truly,

FRANZ CLOUTH.

Coln-Nippes, August 29, 1891.

While our correspondent has been properly answered by private letter in regard to the subject of his inquiries, it may be proper to use his letter as a means for directing attention to a feature of THE INDIA RUBBER WORLD which may be found of much use to any reader who will keep it in mind, viz.: the "Rubber-Buyers' Directory." There are few articles of rubber manufacture, and few supplies required in rubber mills, that are not mentioned in this "Directory," together with the names of trustworthy parties having them for sale. To those readers who have not followed this plan hitherto, it may not be amiss to suggest that, whenever an article is described in the paper which seems desirable, they turn at once to the "Rubber-Buyers' Directory" to see if it does not indicate where the article may be secured. This method would at once have indicated where "Fossil Flour," for instance, is kept for sale, together with other information of interest concerning it.

They Object to Patent Stamps.

THE outer-sole cutters of the Alice Mill of Woonsocket, R. I., recently found that a patent stamp had been placed upon their machines, and they were ordered to stamp all the soles cut, a job which had formerly been done by ten boys with hand stamps, who earned \$1.25 a day. The new arrangement obliged the outer-sole cutters to stamp their own work in addition to cutting it out. This they were unable to do and keep up, the new work taking considerable time. Many of the cutters who formerly cut 900 soles under the old arrangement can barely cut 600 now, and some can hardly cut one-half their usual amount, so they state. The cutters in question made from \$2.25 to \$3.75 per day, according to ability, and they protest vigorously against this curtailment of their wages, as there has been no advance in the price per hundred soles, which is 37½ cents, to correspond with the increased amount of work. The men claim that the additional time and trouble required in stamping delays them so that their earnings are reduced from 25 to 50 per cent.

GUTTA signifies something sticky, like gum or bird-lime, and percha means rag or strip of cloth. Gutta-percha before it is treated looks like rags half reduced to paste which has been afterwards pressed.

Balata and Its Uses.

BALATA comes from the East Indies and also from Guiana and the valley of the Orinoco. While it is used to a considerable extent in Europe but little finds its way to this country, say ten or fifteen tons annually, and this amount is mostly if not altogether composed of the South American sorts. The supplies of this kind reach America via Europe, very little if any reaching us direct. Comparatively India rubber becomes sticky, gutta-percha brittle, but balata remains substantially unchanged by time, except perhaps that it becomes very dry, with an almost imperceptible shrinkage. One house in Liverpool makes a specialty of it, buying up all the available supplies for the last two years. It is very hard, and the East Indian sort is so much so that it never has obtained favor in this country, one manufacturer after the other having experimented with it only to abandon it. Improvements in the working of it have been made from time to time, but they principally remain a secret with a very few people.

In South America the milk is collected and brought to a distributing point where it is poured into trays forming layer after layer as it is congealed until a block is made which weighs about forty pounds.

The practice used to be to congeal it in the forest, but the natives were so addicted to the practice of putting in barks and other matter that in self-defense the factors demanded its carriage in a liquid state to the coast obviating to a large extent the impurities formerly found in it. Its price now ranges from 80 to 85 cents per pound, which is relatively cheaper than gutta-percha, with which it can fairly be said to rank in the uses made of it. Were its mode of working better known it would undoubtedly be used more largely, and as gutta-percha is now fast disappearing and the demand for a substitute becoming more and more urgent, experimenting with it will probably be more general and its secrets gradually disclosed. It is now used here on the inside of belts, which serves to keep them from blistering, and pure balata belts are spoken of as being superior. The sticky defects in rubber are found wanting in this use. It is used also in cement and leather boards with good results.

Balata is brown in appearance, the East Indian sorts after a while having the appearance of old leather.

Some Balata compounds: Two lbs. Caoutchouc, one lb. Balata and 9 oz. Sulphur vulcanized by heating at 260 to 280 degrees from 2 to 6 hours. This compound is suitable for a soft vulcanized substance. For a hard rubber use one-quarter pound of rubber with a 20 degrees greater temperature and two hours more time.

For substances not to be vulcanized, the following combinations are given: 3 pounds Balata, 3 pounds Caoutchouc, 2 pounds vulcanized Caoutchouc in powder.

Or: 2 pounds Balata, 6 pounds Caoutchouc, 2 pounds Colcothar.

Or: 3 pounds Balata, 1 pound Caoutchouc.

Or: 3 pounds Balata, 1 pound Shellac, or any gum insoluble in water.

Or: Caoutchouc, Gutta Percha and Balata in equal proportion.

Or: Gutta Percha and Balata alone.

The Caoutchouc and Balata are combined by mastication. All these compounds can be moulded in metal rolls into various articles.

Balata compounds can also be vulcanized by the cold sulphur process. Another formula is given as follows: 2 pounds Balata, 6 pounds Paraffine, 2 pounds Naphtha, prepared much in the same way as the foregoing, and like them is claimed to have all the qualifications of an insulating substance being perfectly impervious to moisture.

How is this for a Rubber Suit?

A YOUNG man in Indianapolis, somewhat given to scientific pursuits, remembering Frank Stockton's negative gas story in the *Century* some years ago, has put the idea into something like practical use. He has made a suit of rubber cloth, the inside of which fits him skin tight. It is all in one piece and is of two layers. The outside, when the suit is inflated with gas or air, stands away from the skin-tight layer at the distance of about nine inches, and the two layers are fastened together, air-tight, at the ankles, wrists, neck and along the seams on the inside of the legs.

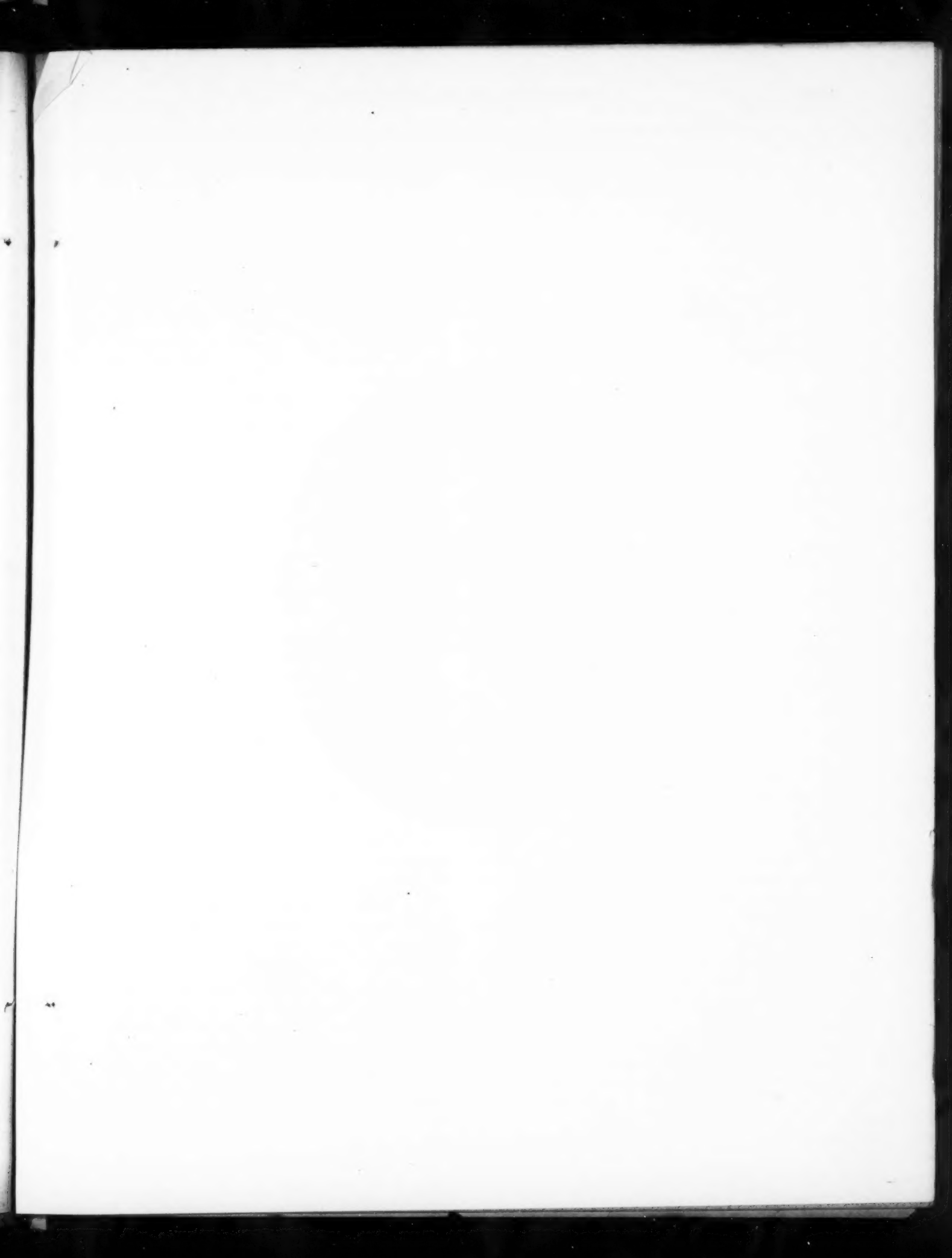
When fully inflated he seems to have a body eighteen inches in diameter larger than usual. At a convenient point on one of the arms of the suit he inserted a valve, to be used in filling or as an outlet for the gas, as occasion required. Over this he puts a Mother Hubbard gown of white flannel. He weighs one hundred and thirty pounds. When inflated with natural gas his weight is only nineteen pounds.

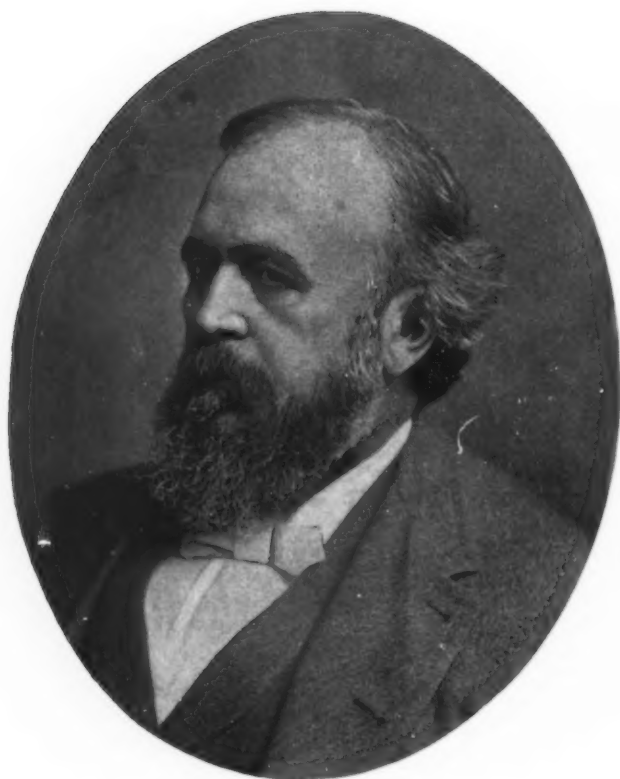
On the first trial he entirely surprised himself. He found that when he exerted himself about as much as in ordinary running, his strides were over sixty feet each, and a regular "half-hammon jump" covered over 198 feet. One night he started to Broad Ripple, after the streets were deserted, so as not to frighten horses.

At the Ripple he sprang across the river, near the railroad bridge, in two jumps, using a partly submerged log in the middle of the stream as a landing spot. Seeing the story about the ghost having been seen there lately, he supposes that some belated resident saw him as he was crossing the river.

He says he is not willing to keep his discovery any longer a secret for fear of danger to himself. Several evenings since he was out practising when he was suddenly chased by a large dog. In order to escape the animal he gave a powerful side jump and inadvertently landed on a porch roof. Some persons inside the adjacent chamber raised a great outcry, and a window was raised and a pistol fired, and he was thoroughly frightened. Soon after that it was reported that a peeping Tom was around in that neighborhood. So he will have to give up his fun or familiarize people with his appearance.—*Indianapolis News*.

A LATE invention, the cushion car wheel, is described as being a thick rubber band placed between the tire and centre of the wheel, and which acts as a cushion, absorbing all vibrations. The rubber is so attached as to make any danger from a hot box or from corrosive action an improbability; and for durability, safety and economy the idea surpasses any heretofore suggested.





THOMAS J. MAYALL.

Pioneers of the Rubber Trade.

THOMAS J. MAYALL.

MR. MAYALL, who was perhaps as well known during his lifetime as any man in the rubber business in the United States, was born in North Berwick, Me., August 10, 1826, and was curiously enough the seventh son of a seventh son, thereby fulfilling in the accident of his birth the mystic conditions that are supposed to pertain to this condition of things. He had but slender opportunities for school education, attending the village school until he was about eight years of age, when he went to work in a cotton factory as a bobbin-boy. After a long time he saved \$4.50 from his wages in the mill, which were 32 cents a day, and he then started for Boston. All that he possessed in the world was tied in a bundle, and he entered the cars with a \$3 ticket and landed in Boston in the spring of 1839, in the old Lowell depot, with \$1.20 in money and not a friend in the city. After buying some fruit to satisfy his boyish hunger, he set out to look at Boston Common and then went and examined the outside of Faneuil Hall; whereupon, he started out to find work. He finally discovered a man who said he wanted a boy to go to New Bedford, and charged him \$1 for the information. This the boy gave, and started to find the station of the Providence Railroad. As he only had a few cents left, he made up his mind to walk down to New Bedford. He started from the Providence depot, and stopping to look at a locomotive which was different from any that he had ever seen before, he left his bundle on a seat, from which place it was stolen. After looking for it for some time he gave up the hope and started out on his walk to New Bedford. It was March and the railroad bed was wet and slushy, and his boots were full of holes. He kept on for about five miles, but night coming on he retraced his steps to Roxbury Crossing, and there, having no place to sleep, he walked up and down all night. In the morning he made up his mind he would not go to New Bedford. Instead, he inquired for work at Roxbury, and found that a boy was wanted in a paper factory. This factory was in the second story of a wooden building, in the lower story of which Mr. Goodyear had a factory where he made rubber goods in the then primitive style of manufacture. He had some difficulty in getting a situation here, but being persistent, he was finally told he could go to work at \$2 a week, making up enough for his board by sawing and splitting wood, evenings. He also worked overtime, printing paper rolls at the rate of eight cents a hundred rolls.

About this time he developed a talent for making experiments in paper printing, and finally designed a small machine that would print paper in two colors. His employer, seeing it, had a large machine built and it proved quite a success, and was really the forerunner of color machines in paper. He also learned how to make an excellent kind of satin-faced paper.

Shortly after this he became interested in rubber and went to work for Mr. Goodyear in his factory in the basement of the building, which site is now occupied by the

great factory of the Boston Belting Company. Through all the earlier successes and failures that the rubber business experienced young Mayall stuck closely to the business, and of the hundreds of inventions that he made, many of them became the subjects of the most valuable patents. Some patents he sold for a song, and some he realized a great deal of money on. He was not, however, a man who cared to keep money for its own sake. On the contrary, whenever he got any, he spent it in fresh experiments. His versatility was very wonderful, and it seemed as if he never could come to the end of his flood of new ideas.

It is said that at one time, when at the zenith of his fame, he was employed by a large New York rubber manufacturer at a salary of \$10,000 a year. During his lifetime he was granted several hundred patents, and had many other inventions which he planned some time to bring out. He was the founder of the Mayall Rubber Co., at Reading, Mass., where Golden Sulphuret of Antimony was the chief vulcanizing agent used in all goods, and where it was proposed to banish the use of sulphur. Here was made a shoe that had no stockinet lining, which was at first very popular. It however did not wear well and was soon withdrawn from the market. In the midst of his experiments in antimony rubber the mill caught fire and was entirely destroyed.

Personally Mr. Mayall was a thick set, florid man, very enthusiastic, and a constant worker. He had a small experimenting shop at his house where he had all the different kinds of machines in miniature necessary for the manipulation of rubber, and where he spent much time. His garden also, instead of being planted with vegetables, was underlaid with rubber and gutta percha covered wires and cables, which lay for years undergoing the tests of time. Mr. Mayall died at his home in Reading, Mass., February 18, 1888, aged sixty-two years.

Humidity and Boot Making.

HUMIDITY has of late been playing the deuce with the work in the rubber mills. At the works of the L. Candee Co., in New Haven, Conn., fog and dampness were found coming in at the windows, and settling all over the work then in process of making. Of course it was at once shut out. Then the tempers of the bootmakers gave way and they talked of striking. The management, however, realizing that work in hot, moist weather was liable to make people irritable, were very lenient in their treatment of the grumblers. The men were told that they might stay out a little until the weather was better. As a matter of course the newspapers made all the capital possible out of the occurrence. They sent reporters to interview Superintendent Elliott, and to leading bootmakers. They brought out sensational stories one day and took them back the next. Finally the weather became cooler, and the men came back, and quietly went to work again. While Humidity was making this trouble in New Haven he was also busy in New Brunswick, where, at the factory of the New Jersey Rubber Shoe Co., almost the same scenes were enacted.

With the Rubber-Gatherers in Nicaragua.

THE methods of gathering India rubber vary with almost every country in which this substance is found. In Nicaragua the rubber-gatherers go out in parties of six, ten or fifteen, in two or three canoes, paddling up the San Juan River. The best rubber-gathering is near the source of that stream. These canoes are of all sizes but an average measurement would be thirty feet long and four feet in beam. The difficulties usual in dealing with the natives in other countries are not wanting. All hands must have their preliminary debauch, in which all personal advances of money are squandered. As the end of the debauch approaches, the *padrone*, a term as significant in that country as in this, begins to feel some pride in his agreement and rallies his people.

The stores are placed in the canoes, an outfit for a party consisting approximately of a bag of salt, a half-barrel of flour, large fish-hooks and line and powder and shot. The average cost of the outfit for each person is placed at \$50. A score of years ago the trip would not have consumed more than a fortnight, but the destruction of the trees has been so great that longer distances have to be covered, and parties are now absent sometimes so long as six or eight months. The outfitter risks his advances for that length of time and a total loss sometimes results, the *padrone* and gang returning without rubber, having sold it on the way. They bring stories of disaster, more or less plausible, but practically with one result—a disappointment to all expectations.

Arriving at the scene of operations, the men with their long *machetes* cut through the brush until they reach the trees, which they proceed to tap. This is done by making long angular cuts, shaping them like the letter V. The milk follows the grooves and is collected by means of a common groove reaching to the foot of the tree, when it is collected in proper vessels. The coagulation is brought about by a peculiar process. A certain vine growing in the rubber districts is cut into small pieces and with the addition of brown soap suds are formed. Their appearance is not unlike frothing champagne and into this the rubber milk is poured. The action of coagulation by this process is a rapid one and the product is dumped upon the ground. Pressure is then applied to it and a cake or *torta* is formed. Over this a palm-leaf is laid and another sheet is formed on top until a mass of sufficient size is formed, from which the moisture is allowed to dry out. In the cuts in the tree, however, there is a residuum of rubber remaining which is the perquisite of these men, and which is called *barucha*. This is gathered and forms the scrap rubber of commerce. As it is perfectly dry it is valued at a higher price than the sheet. To prevent the *padrone* and his men from gathering this rubber to the exclusion of the sheet a certain proportion is insisted upon.

Payment for gathering rubber is approximately as follows: The *padrone* receives twenty cents per gallon for the milk, of which he allows three to five cents to his men. The proportion of "suds" to the milk is one pint to the gallon, and the latter makes about two pounds of

dry rubber. The rains are the great drawback to the coagulation of rubber, and all sorts of measures are adopted to obviate the evil effects. Often the natives, upon the appearance of a storm, will place the milk in a canoe and row themselves out of the reach of the rain. Virgin rubber is a term applied to that obtained from trees tapped for the first time.

The milk does not run freely and the gathering is precarious in its results. While the gathering of rubber in Nicaragua is little known to the general public, there are firms in New York who have carried on the business for twenty years, transacting all financial arrangements from this centre, and fairly managing this complex business from their office desks. The margin of profits, however, is large, as the twenty cents paid to the *padrone* in the forest, plus freights and other charges, would hardly reach the one dollar paid for the product of a gallon of milk in New York.

What a Rubber-Man Saw in Europe.

DURING a recent visit to Europe Mr. A. Straus, of the New York Belting and Packing Co., visited some of the principal India rubber factories in Germany, France and Great Britain with a view to the study of methods in the manufacture of mechanical goods.

"My impression is that in the compounding of rubber they are far behind us in Europe," said Mr. Straus to THE INDIA RUBBER WORLD, "and that the mechanical-goods business there is far less than with us. We manufacture a great many specialties that are unknown to European factories, though of course they produce some articles not yet made here.

"The demand in Germany for a long time has been largely for cheaper goods, but a reaction has set in and there is a growing inquiry for first-class articles. Consumers have learned a lesson in this regard and they are now willing to pay better prices for the better qualities. In Germany the appearance and finish of all sorts of hose are better than with us. The reason for this is that they make them by hand and spend more time on the goods. Labor is very cheap, and the cost of production is increased only slightly by taking pains. While their hose looks better it does not give the same amount of wear, our compounds being longer-lived. A great deal of their hose after being wrapped is cured in soapstone, which does not produce so good an article as our own. They therefore sometimes imitate our processes to obtain an article similar to our own, calling it 'American seamless-hose,' and they advertise it largely as such.

"In England they use large quantities of garden-hose of the half-inch size, the most of it being very inferior to our own. This inferiority prevails in all three countries. They have an endless belting over there with copper rivets the same as used in the leather-capped belt used in this country. In packing, the Europeans make white mostly, and it is inferior to ours. In mats they use more rubber, but the goods will not wear so well as our own. They make a great many little specialties, such as door-stops, which are unlike ours in shapes.

"The bicycle business is an important feature of rubber-manufacture abroad, but we are ahead on tires. The English have discarded the solid tire, and taken up the cushion. It looks, however, as though the solid tire would come to the front again next year, with some disposition to favor the pneumatic forms. In this country it will be with us a greater development of the cushion tire along with the pneumatic. Our cushions are made more uniform and elastic, and I believe that we have struck the best models for the coming season, and overcome many difficulties.

"I had occasion to go through one of the largest rubber factories and found that their machinery was old in style, and that they had adopted very few of the improvements that we have in this country. They do not use any old rubber, but cheapen their compounds by using substitutes, either to add weight or make goods lighter, as desired."

The New Cable Line to Brazil.

TELEGRAPHIC communication between the United States and Pará and other points in Brazil until within a few days past has been possible only by a circuitous route which would hardly seem in consonance with the fact that New York has larger and closer relations with South America than has any other city in the world. The New York merchant desiring information about the rubber market of Pará, or the coffee market of Rio, has been obliged to cable his messages to England, whence they went to Lisbon and via the Cape de Verde Islands to the coast of Brazil. Or, he could send a message down the West coast of South America across the Andes to Buenos Ayres, whence it was forwarded to its destination. Either of these routes is a geographical absurdity, but this would not matter so much if it were not for the fact that the distance traversed and the number of different companies owning the successive sections of cable and land lines compel many repeating stations, at each of which the message is interpreted at the risk of delay and error. On the trans-Andine route there are peculiar troubles, the Andes generally being covered with deep snows and without roads, two important factors in the ready and constant maintenance of land telegraph lines.

For a long time a cable between Santo Domingo and the coast of Brazil has been worked and important concessions were given to an old company which, like the fabled dog in the manger, would do nothing itself and would allow no one else a chance. This company has finally been ousted. For many years the French government has fostered the manufacture of submarine cables in France, and in pursuance of such a course, has never failed to encourage telegraphic enterprises. The Société Française des Télégraphes Sousmarins with a capital of 11,000,000 francs and with an existence dating back to 1888 has obtained important concessions in annual subsidies from different points along the route. The government of Brazil grants it exclusive privileges for all cable communications between Brazil and the United States for thirty-five years from January 10, 1890, directing that all cables addressed to the United States

handed to the government stations be transmitted by the company's lines for the same time. This privilege, by the way, is one which a long while before its expiration will be apt to strike the American merchant as one that never ought to have been made. It is proper to state that the concessions given to the Pedro Sigundo Co. for a cable landing on Coney Island lapsed some time ago.

The new cable line extends from Santiago de Cuba and Aguadores Cuba to Mole St. Nicolas, Hayti, thence by cable and land line to San Domingo City, thence by cable via Martinique, Paramaribo and Cayenne to Vizen, in the State of Pará, Brazil. The last link was not laid until very recently owing to the difficulty of finding a suitable bottom, the inshore being a coral reef which naturally is very severe on submarine conductors. Communication with the United States is had by the Ocean Cable Company and the Western Union lines. The new cables for the Brazilian route are included in a distance hardly so long as that between New York and Ireland, with a less number of relay stations than by either of older routes to South America, and naturally more susceptible of repair. The rates to start with are high, \$1.95 for each word, or 3 cents higher than via Europe, the tolls being computed according to the rules of the Berne Convention. It is thought by telegraph officials that the rates will soon be reduced as at present telegraphing with Brazil is a costly bit of enterprise, and very few firms in New York avail themselves of any of the privileges now given. Brokers generally depend upon London houses getting their cables at second hand, and very elaborate codes are used by the few whose business warrant the expense at all.

A tour among the large firms in New York City disclosed the fact that as yet no one was using the new cable. It had not been "seasoned," and merchants hesitated to make experiments. Those who availed themselves of cable communications with Brazil cared little about high prices, they simply desired accuracy and promptness. Hitherto it has been an exceptional case when replies could be obtained the same day, and at the moment of inquiry only one house had heard from Pará for a week, some link of cable being broken and the land lines in Brazil, as they generally are, in a state of demoralization. The concession giving the government exclusive right to handle all messages handed into government telegraph offices in Brazil was not understood, and it was not believed that the text contained such a privilege. It would place the business interests of the country in the hands of a possibly incompetent carrier. If competition was allowed the new-comer would be carefully tested, and if the new route proved more speedy, and it had chances that way, then it would receive a liberal patronage. On the whole merchants were glad that the enterprise had succeeded.

The new company has also laid cables to Venezuela which touch at Curaçao, La Guayra and Trinidad. The arrangement of the two routes traversed by the cable company is such that one route can be used in substitution for the other, thus insuring against serious delays by reason of a break in either cable. The first message over the new line reached New York, September 2.

Current Gleanings.

BY LIGHTNING ARRESTER.

NOW that electrical men have become so ambitious in their schemes for the transmission of energy over long distances by means of electricity, the manufacturers of insulated conductors will have to bestir themselves in order to meet the demand for insulating materials capable of withstanding very high pressures. The experiment which has attracted so much attention in connection with the Frankfort electrical exhibition of transmitting power electrically from Lauffen to Frankfort, a distance of about 110 miles, has been carried out with complete success. No details of the results of the actual working are yet to hand, and one of the first telegrams received which gave an account of the operations stated that the working pressure was 13,000 volts, whereas we were originally told that the pressure of the line current would be as high as 30,000 volts.

HOWEVER, the fact remains that the experiment is a success electrically speaking, and a striking feat of this sort is bound to be the precursor of many others. For instance it has been proposed in various quarters that the World's Fair should contain an exhibit of electrical apparatus operated by power from Niagara Falls. The distance between Niagara Falls and Chicago is nearly 500 miles, or more than four times the distance between Lauffen and Frankfort, and it has been estimated that allowing a reasonable cost for the conductor, a pressure of 80,000 volts would have to be used. Such a pressure is of course enormously higher than anything that has yet been attempted for practical work, and the difficulties of insulation would be very great indeed. In Germany they have made use of oil insulation; the transformers are immersed in oil and the conductors are supported on oil-cup insulators; as a precaution against untimely electrocutions to every pole is attached a notice surmounted by a death's head, warning people to keep clear of the poles and wires.

THERE is little doubt but that in a few years' time it will be a matter of common practice to use these very high pressures for long-distance transmission of energy, and the manufacturers of insulated wires must look to it that they are able to supply insulating materials which will withstand the strain. Oil cup insulators are all very well in their way, but it will not always be possible or desirable to build lines for such purposes entirely with bare conductors carried overhead. Before very long cables will undoubtedly be needed to carry these very high pressure currents, and it will be as well for those interested in the production of cables to bear this in mind. Last month I described some interesting experiments showing that vulcanized rubber may be so prepared as to enable it to withstand very high pressures, and there should be a good field for experiment in this direction.

A NEW factory for the production of insulated wires and cables has lately been started at Trenton, N. J. The name of the new concern is the Crescent Insulated Wire and Cable Co., and it is announced that wires and cables of all classes and for all purposes will be supplied, the style of insulating material used being seamless rubber.

SOME interesting tests were recently made by Mr William Maver, Jr., of New York, to ascertain the effect of high temperatures on the insulation resistance of vulcanized rubber cables of the type used in the subways for electric light circuits. In many parts of the city the ground is kept abnormally hot by

the mains of the New York Steam Co., and a temperature of about 180 degrees Fahr. is not at all uncommon in the man-holes and ducts of the electrical subways. The tests referred to were made on three short lengths of cable immersed in a tank of water which was gradually heated up to the boiling point. At a temperature of 70° F., the cable had a resistance of 1500 megohms per mile, at 150° F. this resistance had fallen to 132.5 megohms per mile and at 212° F. one piece, not lead covered, had a resistance of 9.5 megohms per mile, and another piece, braided and lead-covered, had a resistance of 12.4 megohms per mile. These tests show that the wire must have been of very good quality as an insulation of 132 megohms per mile at so high a temperature as 150° F. is an extremely good showing. The cable tested had a conductor .097 inches in diameter, insulated to 11/32 of an inch. Mr. Maver says that "it may be of interest to note that for over one year high potential electric light circuits have been successfully operated through ducts in the heated districts of New York City, and without any perceptible deterioration in the insulation resistance of the cables."

THE International Okonite Co. (Limited) of New York and London, have brought out a new type of cable which they term the "Acme Lead Cable." It is a lead covered cable designed for extra heavy work and high voltage under extremes of temperature, being of course specially adapted for underground work. The insulating material of the cable is made up in a special manner so as to obtain a very high insulation resistance which shall not be greatly affected by high temperature. The wire is first covered with a layer of Okonite, the high insulating qualities of which are well known, and then with a layer of special rubber compound. This compound, besides being a good insulator, is not appreciably affected by heat, and it serves as a protecting covering to the inner layer of Okonite, insuring the conductor being kept properly in the centre of the core. When the two successive coatings have been applied the core is run through a bath of heated compound, after which it is braided and again treated with compound until the braiding is thoroughly saturated. The cable is then covered with a lead armoring by an improved hydraulic process which secures a dense covering of even thickness and free from blow-holes and bubbles. The lead is alloyed with a small percentage of tin, which insures sufficient hardness to resist abrasion when the cable is being drawn into the ducts.

THE patents belonging to the Cobb Insulated Wire Co., which failed a short time ago, were sold by auction last week in Philadelphia. There were 19 patents in all referring to the Cobb method of insulating conductors with a hard flexible compound; all these patents were granted to Henry B. Cobb, and with them were sold "a certain invention and patent to be obtained therefore as follows, to wit: 'A method of and machine for manufacturing insulated electric conducting wire,' as described in an application filed in the United States Patent office by Henry B. Cobb, May 29, 1890, serial No. 353,561." The patents were bought by James C. Stillwell, attorney, No. 727 Walnut Street, Philadelphia, for \$100 each.

THE greatest interest in electrical circles has been concentrated this month in the convention of the National Electric Light Association at Montreal. The convention has been marked by a very large attendance, a splendidly organized electrical exhibition and an enthusiastic reception of their visitors by the Canadian hosts. Unfortunately this paper goes to

press before full reports are to hand of the papers and exhibits of interest to wire and cable manufacturers. Most of the important cable companies had important exhibits of their wares and were well represented by their officials and persuasive agents. The Standard Underground Cable Co. had on exhibition a board containing samples of all the kinds and sizes of cables to be used in the large underground network at Minneapolis for the Minnesota Brush Electric Light and Power Co. The contract for this piece of work was obtained by the Standard Company, in competition with all the leading firms; it calls for the installation of over 400,000 feet of underground cable, making it the largest single contract of the kind ever given in the United States.

Cellulose and Woodite in War Ships.

A POINT of special interest in Cruiser No. 9 is that she will be the first vessel in the United States Navy to employ cofferdams at and below the water line, filled with a water-excluding material, whose property is that of closing together by its own action after being perforated by a hostile shot. The two best-known substances devised for the protection of buoyancy are cellulose and woodite. The former is composed of the ground fibre of the cocoa-nut, and is compressed into rectangular blocks suitable for packing. The substance will burn slowly when loose, but cannot be ignited by a hostile shot when packed, especially as it takes up water. The ground fibre, forming a species of brown metal, is mixed with a small quantity—about 6 per cent. of the aggregate weight—of fibre left in the natural state. Although the compressed blocks or briquettes weigh much more than the same cubical quantity of the substance before pressure, they are, nevertheless, very light, and thus have the double property of buoyancy and of automatically expanding to fill up the hole made by a shot, and so checking the inrush of water. Woodite is an English device having the same general purpose as the French cellulose. The basis of woodite, however, is rubber, this, of course, furnishing the elasticity required. The advocates of woodite are inclined to think that cellulose will decay and give out an unpleasant odor; but while this may be true where no care is exercised in its preparation, it is said to be avoidable by taking suitable precautions. Our Navy Department was for a long time in some doubt as to what substance should be used in Cruisers No. 9 and No. 10, but at length determined to make a trial of cellulose, and then employ it in the other new vessels should it prove satisfactory.

Woodite, which the United States Government has decided not to adopt at present, is the invention of an English lady, Mrs. A. M. Wood. In an article on her invention London *Engineering* says:

"It is not suggested that it will be very efficient in helping out-shot—the days of that idea are nearly over. But it is stated that it has the quality of allowing a projectile to pass through it without inflicting upon it more than a small puncture. The material around the hole gives way to permit the passage of the shot, and immediately returns to its old position; closing the hole so completely that there remains nothing but a spot on either surface into which a black-lead pencil can be pushed with difficulty for an inch or two, but which is quite impervious to water. An experiment has been made at Dartford at the range of Mr. Nordenfeldt, on a target formed of thirty six 8-inch cubes of woodite, vulcanized on a $\frac{3}{4}$ inch wrought iron plate. Three six-pounder solid shots $2\frac{1}{4}$ inches in diameter were fired at right-angles to the target, and two at an angle of 45° . All passed completely through, punching pieces out of the back plate; but the woodite suffered so little injury that close scrut-

ing is required to find the marks of the shots, which are only $\frac{1}{8}$ inch to $\frac{1}{4}$ inch in diameter, and are perfectly closed."

The first patent allowed for woodite gives the following as examples of the compounds or combinations:

	Parts.		Parts.
A. Sal ammoniac.....	55	Borax.....	9
Boracic Acid.....	24	Hydrochlorate of ammonia....	45
Borax, pure.....	13	Ground arsenic.....	5
Gum kauri.....	5		100
Tungstate ammonia.....	3		
	100	D. Sal ammoniac.....	50
B. Tungstate of soda.....	45	Boracic acid.....	20
Alum.....	10	Borax.....	10
Carbonate ammonia.....	20	Gum kauri.....	20
Asbestos (fine powder).....	15		100
Arsenic.....	5	[Or for spongy rubber.]	
Gum kauri.....	5	E. Washed rubber.....	20
	100	Red lead or other pigment....	10
C. Oxidized linseed oil.....	7	Crumb, finely divided.....	50
Gum kauri.....	10	Sulphur.....	8
Sulphate of ammonia.....	6	Damp sawdust.....	6
Boracic acid.....	18	Oxidized linseed oil.....	6
			100

Also with any of the above formulas may be combined one or more of the following ingredients: (1) Whalebone, ground, powdered, or shredded; (2) camphor wood, ground; (3) catechu, ground; (4) tannin; and (5) to A, B, D or E, arsenic, ground.

In preparing these compounds proportions may vary according to the special purpose required. Nor is there necessarily a fixed proportion between the amount of rubber or like gum, and of the mixture or mixtures aforesaid added thereto. A convenient proportion is, however, as follows:

Pará rubber, or equivalent.....	70 parts.
One or more of above mixtures.....	27 parts.
Sulphur to vulcanize, about.....	3 parts.
	100 parts.

Or, a practically fire-proof compound may be formed thus:

Mixture A.....	50 parts.
Add Pará rubber.....	50 parts.
	100 parts.

For a lighter or spongy I take:

Formula B.....	20 parts.
Adding asbestos powder.....	20 parts.
Carbonate of ammonia.....	10 parts.
Pará rubber.....	50 parts.
	100 parts.

Sometimes asbestos fibre is used in place of the powder, when tensile strength is required, and sometimes the addition of ten to twenty per cent. of oxidized linseed oil, of the consistency of firm jelly, so that it will almost crumble.

With formula D:

Mixture D.....	23 parts.
Rubber.....	67 parts.
	100 parts.

For frictional or rough surface, or for mats, stair treads, etc., the addition of whalebone, either shredded, in shavings, or as an impalpable powder, will give most valuable results. For example, for frictional compound, combine whalebone in powder, camphor wood, ground, catechu, tannin, asbestos fibre, Pará rubber. This compound will not suffer from deterioration or oxidation, in consequence of the chemical combination occurring with or among the ingredients.

A second patent describes more in detail the compounds as they are made up for various purposes.

The object of this invention is to manufacture a compound or compounds of Pará rubber (or its equivalent) with the substances hereinafter set forth, the same being amalgamated under the application of heat, and moulded into any desired article or form, and then cured by sulphur or heat in the ordinary way, according to which rubber compounds are cured, in order to bring the article so made into a solid, compact, or spongy body,

somewhat soft to the touch, yet sufficiently hard to withstand abrasion or friction. The hereinafter described composition for solid, compact substance is unaffected by the atmosphere, by acids, and by oils, which renders it particularly united as glands, or packing for engines, pumps and the like, and will answer all the purposes for which ebonite, vulcanite, or similar products are now used.

The proportions of the ingredients, or their equivalents may be varied to suit the particular purpose for which it is intended, and as an example of the proportions, take, say: Forty per cent. Pará rubber and 10 per cent. whalebone, ground, shredded, or otherwise, and to the same add:

20 per cent. Asbestos fibre.
20 per cent. Asbestos powder.
5 per cent. Earth wax.
5 per cent. Carbon.
2½ per cent. Sulphur.

These are admixed with the Pará rubber, while in a semi-plastic state, by rollers or other appliances, and the mass is moulded to the desired form under pressure, or it is rolled into sheets, and when sufficiently set, the articles are cured to the desired degree, and are then fit for use.

For the manufacture of "light-sponge" take:

1 part Alum.
1 part Tungstate of soda.
1½ parts Borax.
3½ parts Camphor.
3½ parts Lampblack.
5½ parts Carbonate of ammonia.

These mix with 50 per cent. Pará rubber, and 2½ per cent. sulphur, while in a soft or semi-plastic state, and roll it into sheets, or spread or mould it to the required thickness; the sheets or articles so made are then cured in a similar way to which ordinary rubber compound goods are cured, as sponge.

For "intermedial sponge" take:

1 part Alum.
1 part Tungstate of soda.
1 part Camphor.
1½ parts Borax.
1½ parts Lampblack.
2 parts Chloride of ammonium.
50 per cent. Pará rubber.
2½ per cent. Sulphur.

These when thoroughly mixed and rolled into sheets, or shaped to form articles, are cured as above mentioned.

For "heavy sponge" take:

1 part Camphor.
8 parts Borax.
1½ parts Lampblack.
10 parts Chloride of ammonium.
50 per cent. Pará rubber.
2½ per cent. Sulphur.

and erect them in the manner described, with reference to "light sponge," and "intermediate sponge."

Sponge made according to this invention is very buoyant, yielding, and supple, and is specially adapted for boats, canoes, and the like, to resist the impact of shot, and, when pierced to close up the opening again.

An interesting interview with Mrs. Wood was printed some time ago in the *Pall Mall Gazette*, in which she tells the story of the birth of the invention:

"My family have been largely interested in shipping, and my sympathies are with those who 'go down to the sea in ships.' A disaster on our coast some years ago, in which a life-boat was swamped, led me to think out a boat that would be absolutely safe, and after a great deal of difficulty I succeeded. I never asked a single question of any one, but made all my rough models and drawings myself. In experimenting for some buoyant substance, I hit upon what Sir Edward Reed has christened 'Woodite.' Cork, you may be aware, when impregnated with water becomes heavier than wood, and, indeed, under certain pressure will sink. It has also a tendency to crumble into dust. My idea was therefore to get some material that would be buoyant without

having these deleterious disadvantages. 'Woodite' is a compound of which India rubber is one of the principal elements, and when I discovered it I found that it not only suited the immediate purpose, but could be applied to other uses. Pure India rubber would not do, as it deteriorates by heat, salt water, and other causes, and for five years I was proving and testing things that might arrest this decay. I know something of chemistry, and carried on experiments in my little den till I at last found the secret. The new compound will last for an indefinite time in all climates, and, besides, it can be manufactured very cheaply."

Recent Rubber Patents.

No. 456,154.—Elastic Woven Fabric; George C. Moore, East Hampton, Mass.

An elastic fabric composed of rubber warps, fibrous warp-threads, filling or stuffing warp-threads, and a weft thread; the fabric having longitudinal cords or ribs formed by massing several rubber warps together in one tube, and having also the transverse ribs formed by massing several shots of the weft together between the changes of the warp threads; and the fabric having had its edges opposite said transverse rib.

No. 456,205.—Atomizer; Henry Robinson, Waco, Tex.

Consists of a two-part body, each part provided with a screw-threaded neck, the inner tube held in one neck and provided with side openings and plug between them; a ball valve in the said tube, a rubber bulb connected therewith, and the outer tube carried by the neck of the other part of the body and rotatable; and provided with side openings and sleeved on the inner tube.

No. 456,218.—Wheel; Harry C. Goodrich, Chicago, Ill.

The rubber tire is so held in the rim that it presses firmly against the spoke heads, and holds them in the locking-slots which are also subject to claims in this patent.

No. 456,251.—Toy; Richard Sehrke, Berlin, Germany.

An expansive rubber bag attached to the stand of the toy, and connected with a ball by means of pipes, in combination with a lever having a plate pivoted at its one end, and having at its other end two figures suspended thereon.

No. 456,271.—Flexible Conduit for Electric Conductors; Charles H. Herriek, Winchester, Mass.

Composed of a spiral lining, a protective wrapping applied to cover the line of separation between the turns of the spiral of the lining and a non-extensible woven or braided covering.

No. 456,661.—Steam-Pipe Covering; Charles J. W. Shearer, Cartersburg, Ind.

A detachable pipe covering section composed of alternate layers of corrugated and plain non-combustible material, whereby longitudinal air spaces are formed throughout the entire length of the section, and the ends closed by asbestos or similar material and having a canvas cover with means such as wires beneath such cover for closing the joint when the section has been placed upon the pipe.

No. 456,677.—Boot or Shoe Heel; Frank P. McIntyre, Philadelphia, Pa.

A boot or shoe constructed with a recess or depression, and sockets in the heel portion, and provided with an elastic pad device fitting loosely in recess, and provided with elastic projections fitted to the sockets.

No. 456,702.—Bicycle Tire; Charles F. Jacobs, Chicago, Ill.

In a tire for bicycle wheels and the like, the combination of a rim outwardly concave, but having distinct side-grooves or groove-like formations within, with two elastic tubes seated in such grooves, and the bearing tire projecting beyond such rim, but lying in the groove between such tubes.

No. 456,705.—Wheel Tire; Henry Myers, Philadelphia, Pa.

A flexible wheel tire adapted to be held in position by a metal

tire, the flexible tire composed of an endless band having bulbs attached thereto to form a discontinuous thread portion of said tire.

No. 456,751.—Rubber Wheel Tire; George Ahlborn, St. Louis, Mo.

An improved tire and securing device therefor, consisting of a rim made of flat sheet metal and having metallic spokes secured therein, and a rubber tire having an endless straight metallic stiffening wire eccentrically moulded therein, located at a distance from the centre of the body of the rubber, and arranged near the surface of the wheel rim; the flanges upon the edges of the rim being adapted to be turned upward against the tire, overlapping or extending beyond the wire core.

No. 456,771.—Pneumatic Tire; Joseph B. McCune, Everett, Mass.

The combination with a flexible tire composed of separate hollow compartments, each provided with an inlet passage of an inflating chamber extending along the tire, and communicating with the inlet passages to all said compartments.

No. 456,821.—Process of Waterproofing and Preserving Textures; Charles F. Hime and John H. Noad, London, Eng.

A process of waterproofing and preserving textures and other materials which consists in treating them with a solution of cellulose and ammonia-zinc.

No. 457,259.—Sounding Toys; Alexandre Décoeur, Bendlikon, Switzerland.

In a toy, a hollow elastic ball fixed to a mouthpiece which is provided with a hole receiving a plug, in which is fastened a sounder, and over which is kept a cap.

No. 457,529.—Billiard Cushion; Stephen DeGaetano, Long Island City, N. Y.

In a billiard cushion, the combination of a facing strip of elastic flexible textile material cemented to the cushion, and a rubber strip provided along its edge with a moulded thin rib of rubber overlapping the upper edge of the facing strip.

No. 457,566.—Packing for Stuffing Boxes; Henry S. Ross, New York.

The combination with an elastic yielding portion of a strip or sheet of lead or other pliable matter, covering the elastic and yielding portion, said strip or sheet being solid for a part of its surface, and cut into transverse strips on opposite sides or edges to form alternate tongues and grooves on each side or edge thereof, the tongues on one side or edge being adapted to closely fit into and fill the grooves of the opposite side or edge, when the metal strip is wrapped around the elastic and yielding portion.

No. 457,579.—Means for Attaching Rubber Tips to Pencils; Eberhard Faber, West New Briton, N. Y.

The combination with a rubber tip or eraser and a pencil of a narrow metallic band surrounding the junction of the tube, and having its peripheral grooves or indentations in glue or similar adhesive material between the rubber and pencil end, which also passes into the grooves or a roughening of the metallic bands for connecting the parts together.

No. 457,851.—Weather Strips; George A. Ennis and Columbus J. Westfall, Livingston, Montana.

A weather strip consisting of a rigid strip formed on a compound curve, the rubber strip wrapped around the rigid strip except at the end, with the upper edges of the rubber strip extending to a door; a metal strip covering the means which secure the extended edges of the rubber strip to the door, another metal strip secured to one end of the rubber strip, and of a curved strip on the door frame, a wear plate on the under sides of the rubber strip, a bracket secured to the door, and a spring coiled around a rod in the bracket and bearing against the wear plate.

No. 458,142.—Wheel Tire; Benjamin Blundstone, Providence, R. I., Assignor to the Mechanical Fabric Co.

In a textile lining for elastic hollow tire, the combination with threads extending in opposite diagonal directions to the ends of the lining of longitudinally extending cords, interbraided with the diagonal threads forming one-half the circumference of the

lining, and adapted to reduce the longitudinal expansibility of those portions of the lining adjacent to the cord.

No. 458,212.—Rubber; Charles J. Bailey, Newton, Mass.

A rubber shoe or overshoe having a series of converging vertical ribs on its exterior at the rear part of the heel end of the shoe, said ribs converging to the top, and thereby keeping the upper edge of the shoe snugly about the foot.

No. 458,316.—Electric Conductor; Frederick E. Degenhardt, Chicago, Ill., Assignor to the Standard Underground Cable Co., Pittsburgh, Pa.

The combination of a series of two or more conducting wires, each surrounded by a perforated strip, said conductors being laid up in the form of a cable, a perforated strip surrounding the cable, and an imperforate covering applied outside of the perforated strip.

No. 458,393.—Pneumatic Tire; William Heale, Battersea, Eng.

The combination with an inflation air tube of a canvas tube formed of a strip of material and having its seam made with free edges; and located around the said air tube so that its seam is at the side of the tire; a strip of canvas or other suitable material attached circumferentially or centrally to the outer base of the rim of the wheel so that its edges are free; and an outer cover or sheath adapted to cover the canvas tube enclosing the air tube, and having its edges attached by cementation to the edges of the strip of canvas or other material attached to the rim of the wheel.

No. 458,547.—Flexible Tire for Wheels; Ben. C. Foster, New York, Assignor to Neil Campbell, of New York.

A flexible tire for wheels, comprising a continuous hollow rim, circular in cross section, and a continuous spider-like web, formed within, and integrally with the said hollow rim; the said web comprising a central hub, and radial spokes, so as to produce in connection with said rim a series of continuous compartments separated one from the other.

No. 458,561.—Insulating compound; James L. Marraud, Malden, Mass.

A composition of matter consisting of calcine lixiviated infusorial earth, talc or soapstone, lampblack, sulphur, litharge, rosin, silicate of soda, rubber, bisulphide of carbon, fir balsam, and benzine or naphtha.

No. 458,840.—Waterproof Parchment Paper; Amory Andrews, Kennebunk, Me., Assignor to the Leatheroid Manufacturing Co.

A waterproof parchment paper, consisting of parchmentized cellulose, and fibrous asbestos distributed through the substance, the whole saturated with waterproofing material.

No. 458,888.—Swimming Glove; John G. Elsele, Philadelphia, Pa.

A swimming glove consisting of an elastic web with fingers and thumb pieces open at both ends secured on the back thereof, and provided with a fastening strap at the wrist portion thereof; said portion having a stiffening piece imbedded therein, and a portion of the web being between the finger pieces, and the stiffening pieces being plain and without covering.

Protests in Customs Cases.

A CIRCULAR has been issued from the office of the Board of United States General Appraisers, No. 334 Canal Street, New York, stating that all protests in customs cases pending before that Board which were received before July 23, 1891, have been set for hearing for the dates specified in the circular, beginning September 14. The cases set for each day on the calendar have been grouped according to the similarity of the points involved, so that all like cases may be disposed at one hearing and under one decision. With this end in view the cases relating to India-rubber fabrics and elastic goods have been set for October 9, before Board No. 2, composed of J. B. Wilkinson, T. S. Sharretts and George H. Sharpe.

New Goods in the Market.

TO MANUFACTURERS AND PATENTEES:

It is our aim to embody in this department descriptions and illustrations of all the latest novelties introduced in the market, to the end that jobbers, retailers and buyers of rubber goods generally may look here for information as to everything new that each month or season brings forth. Manufacturers and patentees are, therefore, most cordially invited to co-operate with us in making the department as complete and attractive as possible—the distinct understanding being that no charge whatsoever, either direct or indirect, will be made for these publications. Our reward will come through giving our readers valuable information; and that will be reward enough, if manufacturers but give the information freely and in all cases at the earliest practicable moment.

In forwarding descriptions of new goods, be careful to write on one side of the paper only; be brief, but always write enough to give the buyer a clear idea of the article you offer; give your full address, plainly written; and in all cases send a small illustration or wood cut if you have one.

WITH the advent of September comes the popular fad of the year among athletes, which is foot-ball playing. To those who are really fond of an athletic game that has many points of scientific interest, a game where both skill and muscle are needed, the game of Rugby cannot be excelled. This is oftentimes played with the egg-shaped ball that is used in England. In this country, however, a ball that is exceedingly



popular is what is known as the "Match" Association Ball. This is made of carefully selected grain leather, with an interior rubber bladder of fine Pará rubber, the whole finish of the ball being as perfect as such work can be made. This is put up expressly to meet the demands of colleges and foot-ball clubs. It is made in two sizes, known as No. 5 and No. 6;

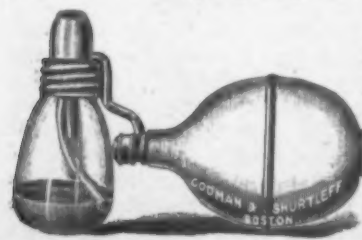
and is a perfect sphere, which makes it far better for kicking than the English shape. Another ball by the same makers is what is known as the American foot-ball. This is made of heavy canvas, through which rubber is forced until it becomes a part of the fabric, making it thoroughly waterproof and exceedingly strong and elastic. This is made in six sizes, and it is proving an exceedingly popular ball for the ordinary rush game that is indulged in so many of the smaller schools during their hours of recreation. Both these balls are manufactured by Horace Partridge & Co., Boston, Mass.



Improved Vaseline Atomizers.

SO POPULAR were the atomizers known as Vaseline Atomizers last season that the prominent makers have put their best talent this season upon getting out new and improved forms, anticipating a large sale for the fall and winter.

A new one that is gotten out by Codman & Shurtleff of Boston is illustrated herewith. The general shape of the Atomizer is the same as before, but more compact and less liable to



get out of order. It has a screw-necked glass vial, with metal screw-neck and atomizing tubes, both of which are handsomely

nickel-plated, and has a bulb of the best quality of white rubber. It is filled very easily, and just as easily cleaned; and there is not the least danger of the fluid spilling. This Atomizer is used in the treatment of hay fever, catarrh, asthma and bronchitis. A variety of medicines are combined with vaseline, and used through these instruments, such as camphor, carbolic acid, iodoform, hamamelis and zinc oxide. Manufactured by Codman & Shurtleff, Tremont Street, Boston, Mass.

The Arctic Sock.

IT may seem a little bit early to begin to talk about foot warmers; but the larger wholesalers are already buying their stock of fall and winter goods. An article manufactured by a



well-known rubber man, and one that has a constantly increasing market, is what is known as the Arctic Sock. The use that it has been put to within the last year or two is that of a foot-warmer in the place of the ordinary hot-water bottle. Of course this sock was primarily manufactured to be worn in a rubber boot; but so wonderfully did it adapt itself to the foot warming business that almost every firm in the

country had it for sale throughout the fall and winter. Manufactured by John H. Parker, Boston, Mass.

A New Bicycle Cushion-Tire.

A. STRAUS has obtained a patent for a new bicycle cushion tire which possesses some peculiar good qualities. In this country many of the cushion tires sold are not "true"; that is



FIG. 1.

the inner hole in them is made so small in diameter that they partake more of the nature of a solid tire. The diameter of the holes in the centre of some tires made in this country is so small as $\frac{1}{4}$ of an inch. The smallness of this hole accounts for the lack of complaint of the cutting of the tire from the inside. On the other side of the Atlantic the majority of cushions are "true," and this accounts for the numerous complaints of cutting. The constant depression of the cushion flattens out the hole, splitting the inner surface at the side. This has become so serious a matter that it is now the opinion among tire-makers that the tendency is strongly towards the solid tire, or the simple choosing of the lesser evil. The invention of Mr. Straus is fairly explained in the illustrations. Cut No. 1 shows the cushion in its normal condition and No. 2 under compression; in the latter case it takes the form of a double cushion. The diameter of the hole is $\frac{1}{2}$ or $\frac{3}{4}$ of an inch, and therefore it obviates the defect in the American form, and as it will not crack, it has not the objection of the English tire. It is made in three sizes for 26-inch, 28-inch and 30-inch wheels. The patent for this tire, which is styled the S. P. Cushion Tire



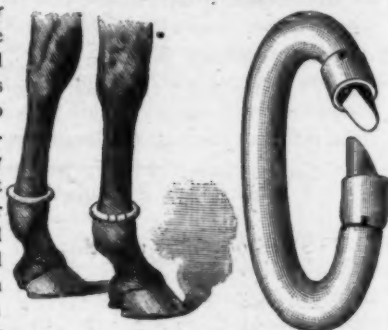
FIG. 2.

was granted. June 2, 1891, and it is now being placed upon the market by the inventor's firm, the New York Belting and Packing Co.

Covert's Patent Rubber Interfering Boot.

THIS new article of manufacture claims special attention at the hands of the trade, for these reasons: It is a complete air-cushion; it is light and elastic; it will protect the ankle better than the usual leather boot; it will not have to be cleaned and dried before using, as it cannot absorb water, or rot or become damaged by exposure; it will not retain mud, dust or dirt; it is easily and quickly adjusted and readily removed when desired; it is neat in appearance, and does not injure or irritate the animal.

This article, it is said, is adding largely to the already extensive business of the manufacturers, the Covert Manufacturing Co., West Troy, N. Y. Prices and other particulars may be had from the manufacturers.



Tyrian Powder Blower.

A VERY popular seller is the Tyrian Powder Blower, lately brought out by the Tyer Rubber Co. It is gotten up in extremely attractive form, the rubber bulb being of a fine quality of red rubber, and the hard rubber tube having an excellent finish. A very practical part of the make-up of



this blower is the manner in which the bulb is charged with powder. The long tube through which the powder is blown is made in two parts; and when divided, the portion that is left with the bulb forms a neat little scoop which allows of the charging of the bulb very handily. The blower is put up in a neat red leatherette box. Manufactured and for sale by the Tyer Rubber Co., Boston, Mass.

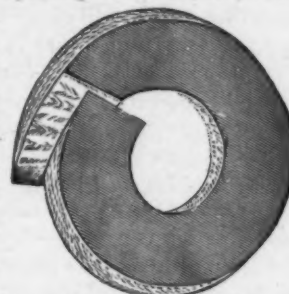
An Aid to Comfortable Walking.

If it is said of a man that he is "well heeled" the listener at once gets the idea that that individual is more or less to be envied. A Boston inventor has recently placed it within the reach of almost every man, woman and child in this country to become well heeled, and that very quickly. As a preliminary to the announcement he makes to the public, he mentions the fact that thousands of people are every day tired and cross from walking and standing on hard surfaces. The shock or jarring of the body when walking will without question aggravate many physical and mental troubles; and any invention that can give relief from this is sure to be generally adopted. The Anglo-Saxon race, as a rule, walk on their heels; and when these heels are pounded all day long on granite sidewalks or marble floors, or even on the wooden floors of stores, it is no wonder that people become nervous and are many times wrecked in health. The inventor has therefore produced a tiny rubber cushion, just the size of one's heel. The surface of the cushion on the rubber side consists of a series of little cup-shaped projections, which are very elastic and which will do much to lessen the shock from walking. The part of the heel cushion that comes next to the stocking is covered with kid, so that the rubber is not in contact with the foot at all. These goods are already

indorsed by leading physicians, and having been thoroughly tested by practical shoe men are said to be of great utility. A popular price attaches to these, a pair of heel cushions costing only 25 cents. Manufactured by C. J. Bailey & Co., No. 22 Boylston Street, Boston, Mass.

A New Rubber Packing.

THE stuffing boxes of rubber calenders, paper calenders and a host of other machines, are forever leaking and causing trouble and expense. To find a packing that will actually overcome so serious a fault, is what many an engineer and mechanic has striven after. Many have found it in the packing shown above, which is "the original ring packing" but improved and adapted for existing mechanical needs. It is now largely used for packing piston rods, valve stems in steam engines, steam pumps, and is very useful in connection with electric light plants. It is said to have less friction than any other packing, does not grow hard, and never corrodes metal. Manufactured by the Gould Packing Co., East Cambridge, Mass.



Should be in Every Engine Room.

THE rubber manufacturers are such large and constant steam-users, that it has come to be a necessity with them to have the best of engineers and firemen. Anything, therefore, that tends to fit this important class of help to discharge their duties in a more intelligent and economical manner is at once appreciated. A little book that is receiving the indorsement of many large manufacturers and that is proving of great benefit to engineers is what is known as a "Key to Steam Engineering." It is gotten up in as simple a manner as possible, the information being put in the form of a series of questions and answers. The arrangement of subjects is very excellent; the first chapter treating of *air*, the second *water*, the third *fuel*, the fourth *steam*, the fifth *boilers*, and so on.

Following the catechism is an article on "Combustion Practically Considered" which is the result of years of careful investigation on the part of the publisher, who is an expert in this line of work. Published by H. S. Williams, Treasurer of the New England Roller Grate Co., No. 65 Federal Street, Boston, Mass. In paper covers, 25 cents; cloth, 50 cents. Sent postpaid.

THE Celluloid Co., New York, have placed upon the market a celluloid film for use in kodaks and cameras generally. The ordinary glass is bulky and inconvenient, and as snap shots are ordinary concomitants of life nowadays, something of this character had become imperative. The sheets are of course very thin, easily rolled, not liable to injury, and light in weight. A party going to Egypt, took 1500 of these films with them. They occupied little space, and were of trifling weight—a few pounds. Had they been of glass it is a question if that part of the pleasure of the tourist were not omitted altogether. The celluloid company are doing a business of about \$500 per day in these films, and it is as yet little known.

C. W. CURRIER, of Amesbury, Mass., has accepted a position as travelling salesman to take charge of Massachusetts business with the Wales-Goodyear Co.

Every-day Work in the Factory.

BY NICK R. AUGER.

READERS of the newspapers cannot but notice how much capital is being made out of the fact that a few rubber-workers have struck because of an alleged lack of ventilation in their workrooms. Almost any rubber-manufacturer, particularly in fine goods, will probably tell you that he has had trouble with help on this very same point. To be sure it may be that it never has gone to the lengths of a strike, but when the weather is particularly damp it has been a matter of necessity with him to have the windows closed and the dampness kept out; and this is apt to draw forth expressions of dissatisfaction from the workers. The fact of the matter is, as a rule, that employes in rubber mills or indeed any other mills, care little, or perhaps it is better to say, think little, of the question of profit or loss to the employer. It is in the making of boots and shoes that this particular trouble has taken place, and in more than one manufactory this summer. Now in this work there is an absolute necessity that the portions that are to be cemented together shall be perfectly free from moisture; indeed, vapor of any kind confined by the cement will result in a series of minute blisters that make the goods unsalable. The hands have been trained carefully to see that the fumes of the benzine are thoroughly out of the cement before the portions are joined together. Just why they do this many of them do not know; but it is to guard against any vapor being imprisoned between the cemented surfaces. Now, during the last month, most of them should know that the atmosphere has been full of little particles of moisture, in far greater proportion indeed than is usual at this time of year. With the windows wide open and this moist air driving in, it was almost impossible to dry the cement or to put two cemented surfaces together without imprisoning these little vesicles of water that under the heat of vulcanization become miniature balloons and produce the dreaded blisters.

In the making of druggists' sundries the same trouble is experienced during wet weather, and in more than one factory of this land of ours, windows have been nailed down and orders issued that rooms be kept closed until the atmosphere was dryer. While this has been uncomfortable in many cases to the help, there is usually ventilation enough to answer all reasonable purposes.

In no line of rubber-work, however, is success so dependent upon atmospheric conditions as in the line of acid cures. A very slight difference in humidity will often spoil a whole day's work in acid-curing, and this too before the rubber-man appreciates that the conditions are changed or that the atmosphere is in any way different from what it was the day previous. The time doubtless will come when in every workroom or factory where fine goods are made there will be a hygrophant or some similar apparatus, by which the foreman can tell exactly what the conditions of the atmosphere are. In order to make this effective there should also be some system of supplying fresh air to the workrooms which should be either heated or cooled to

make it the proper temperature, and be passed through some simple apparatus for extracting the excess of moisture. That factories should be built and equipped in this manner would be no more wonderful than has been the progress of the last five years in mechanical appliances. As I do not profess to be an inventor, I cannot give in detail any scheme to accomplish this end; but without doubt it can be done, and when rubber-shoe-making or fine-goods manufacture of any kind has reached its highest limit of perfection, there is no question but the conditions of the atmosphere will be taken into account, and if not right made right for the best production of goods.

Methods of Speculation in Rubber.

OUTSIDE of rubber-men there are a very few speculators in that gum, as it requires more or less knowledge, not easily acquired, of the ins and outs of the business. An ordinary lot to buy is three cases, which aggregate approximately 1100 pounds. The margin required varies from 25 to 75 per cent. dependent of course upon the condition of the market. The cases after being weighed are generally left in the warehouse until the holder wishes to realize. The speculation is a severe one to the pocket of a man who gets on the wrong side. There is interest to pay, which is not so interesting to the holder as the shrinkage, which amounts to about 10 per cent. per year on new Pará, being even greater in coarse rubber. The holder who gets caught with high-priced rubber on a declining market finds himself paying about 20 per cent. per annum on the value of the merchandise, which is a rather costly experiment. This is in addition to storage and insurance.

There are "bears" in rubber, of course, and in this business as in all speculation they generally make the money. They are professionals, selling "futures" and "to arrive." Naturally they pay no charges. As a rule only the largest houses contain the "bear." To illustrate his operations, he believes that fine Pará will sell lower in December than now. He finds a manufacturer who will need rubber in that month. The manufacturer who does not care to store rubber until then and who possibly believes that rubber is going up is willing to pay more for "future" than "spot." Even if he pay for "future" exactly what he would for "spot" he saves storage, shrinkage and insurance for three months. These factors, however, are constantly working against the real holders and the shrewd bear generally finds a time before the contract becomes due to cover his "short." Of course it is dangerous to sell short when such men as the Baron de Gondoriz are manipulating the market, for the bear would hardly like to fill a contract thirty points more or less above the price for which he had agreed to deliver. In this last commonly-called "corner" only one or two houses went short of rubber, and the break in it was due in a great measure to their efforts. A broker in Liverpool kept continually testing the market with short sales but did not stand "long" and made some losses. The large houses in question, it is believed, made a mint of money, and while

the members generally look upon such incidents as their divine right, they seem pleased.

Brokers pure and simple are poor speculators. When a man has an interest in the market he cannot always give a correct opinion on account of a bias, and his customers are apt to rely upon his judgment. If that proves wrong it hurts his business, and a broker with a commission income of \$50,000 per annum "sticks to his last" pretty closely. Thus only the large houses speculate in rubber and they do it on a scale which passes six figures to one side or the other of their ledgers every year.

Working up in a Rubber Factory.

BY A FORMER SUPERINTENDENT.

HAVING been so long away, a sudden desire to see the United States possessed me, and in spite of the protests of my employer, I cut loose and returned home. When I landed in New York I had very little money; a state that I had been in, by the way, for a number of years; and therefore I was very willing to accept a position as porter in a large rubber store. After working there for a number of months I became quite well acquainted with the proprietor, who was an eccentric old gentleman, and one who had very definite ideas of his own. One day, in the course of conversation, he spoke of the trouble he had in getting a certain line of goods made to his satisfaction. Speaking somewhat impulsively, I told him that if anybody understood the rubber business they ought to make those goods so that they would run uniformly and suit him exactly. In reply he asked me if I thought I could do it; and I was not slow to tell him that I knew I could. The result of that brief talk was that that evening I received an invitation from him to call at his house. Before 10 o'clock we had roughly blocked out a scheme for starting a rubber factory to manufacture this line of goods, and if successful, to go into general goods. It came out during this conversation that my employer had looked me up and learned of my former rubber experience, which saved a deal of explanation on my part. In justice to myself, I want to say right here that when I made this agreement I had it so arranged that I was to have a substantial share in the stock of the new company, besides a good salary as superintendent. My experience abroad had taught me that one might build up a business for another and yet have no share in it after it became an assured success. To make a long story short, we started our shop; and I was able to make the goods in such a satisfactory manner that for a long time we held the bulk of the trade in that particular line. As time went on I gathered a force of men around me who were good workers, and we added various lines until at last, we were numbered among the large manufacturers in the United States. My partner, or more strictly the president of the company, at his death, willed me his stock in the concern, and after ten years of work in this country I found myself a wealthy rubber manufacturer; what I had always hoped to be from the time when I started as a boy in the grinding-room of one of the old-fashioned mills. After reaching

this point, my ambition was satisfied, and my roving, adventurous disposition had received a decided curb. Exactly what moral I should draw from my life I am at a loss to say; but if it has been of any interest to rubber-men, I am glad that it is written; certainly it has afforded me pleasure to pen these lines.

[THE END.]

A New Insulating Compound.

A NEW cable made by the International Okonite Co. has properties peculiar to itself, and of an advantage in special uses unknown in other species of insulation. Passing by its electrical qualities, which are of a high order, as is well known to users of okonite, it has incorporated with the latter a special rubber compound which is so prepared as to resist the extremes of temperature with which electrical engineers so often meet. Wires underground often come in contact with steam-heating apparatus; on shipboard they pass very near the boilers, and in a great many positions which will suggest themselves readily the use of the ordinary wire is open to serious objections. The ordinary insulation in exposed places will crack, burn, spark and melt and is also subject to deterioration by condensation which it is the purpose of the new compound to avoid. This rubber compound in the make-up of the cable is a protection to the okonite which latter naturally is the high grade insulation. In the office of this protection it does not allow the chief insulator to soften, and also serves to prevent the comparatively heavy weight of the conductor to sag down through the insulating materials.

The rubber compound forms a layer by itself and is further manipulated after being laid by running the cable through a bath under high heat until the insulation becomes impregnated with a material which thoroughly protects it from the effect of gas and moisture. Over these two layers of special insulating material is laid a braid which is also saturated with the same material to prevent capillary attraction to the exposed ends of the cable and preserve it from the effects of gas. The cable is then lead covered by hydraulic processes which obviates holes and blisters, and thus forms a uniform surface. The new cable is called the Acme, and is reported to be equal to the extraordinary demands made of it.

The Trade in Atomizers.

THE large business in Atomizers was commenced less than a decade ago. Ellis & Goltermann said to an INDIA RUBBER WORLD reporter that they were led into it by a manufacturer from whom they bought syringes taking a few atomizers from him one day at his urgent request. Now they have more than forty different styles and patterns with a business that reaches from ocean to ocean and from the Gulf to the lakes. A very good atomizer can be obtained for 50 cents; the favorites sell for \$1.50, and one can go from that to cut glass and silver trimmings paying proportionately therefor. In a limited way, however, atomizers have been used for a quarter of a century, if not longer.

A CORRESPONDENT of a Ceylon newspaper suggests to planters that they should scatter a few bushels of Ceará rubber seed in the useless belts of jungle found in proximity to most estates.

Letters to the Editor.

TO THE EDITOR OF THE INDIA RUBBER WORLD: In the August issue of your magazine I noticed an inquiry as to whether India rubber and asbestos were ever combined. Although not in the rubber business myself, I venture to tell what little I know on this topic. I am familiar with the compound which is made up of India rubber and asbestos vulcanized together, and which has wonderful wearing qualities. For example, I know of a place where it was used as a ring for piston-rod packing, and where it wore for more than eleven months in one manufactory, the engine running at 280 strokes a minute. According to last reports it was still in perfect order.

T.

New York, August 30, 1891.

[THE compound that our correspondent speaks of is without doubt that which is patented under the name of Vulcabeston, which is an invention of the Johns-Pratt Co., of Hartford, Conn. It is made not only into piston-packing, but into a variety of articles such as valves, rings, and packing, and without doubt has wonderful wearing qualities.—EDITOR.]

Moisture is Always a Danger in Rubber Mills.

TO THE EDITOR OF THE INDIA RUBBER WORLD: As a worker in a rubber factory where in hot weather ventilation is something that does not exist, I want to inquire whether in your honest judgment there is any good reason for shutting out fresh air? Is it not after all a fad or notion of the bosses, and kept up simply because of their obstinacy? Please don't mention my name.

X.

Boston, Mass., September 3, 1891.

[OUR correspondent will find in another column some pertinent remarks by Nick R. Auger upon this notion of the superintendents. We believe, nay, we are sure, from our knowledge of various rubber mills, that it frequently happens that a little moist air will do thousands of dollars worth of damage. This being the case, and the rubber workers understanding it, there will be little trouble from them in the long run.—EDITOR.]

About Woodite.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Do you know of a substance for protecting armored battle-ships known as woodite? A friend tells us that it is a very light rubber compound; in fact the lightest known, and that it has special excellencies which would be of personal interest to us.

M. H. N.

San Francisco, Cal., July 30, 1891.

[WE think that the article in this number on Cellulose and Woodite, giving the basal compounds of the latter, will answer all the questions that our correspondent desires. If there is anything further to be learned, or any questions we can answer, we shall be very glad to favor our Western correspondent.—EDITOR.]

Asbestos and Rubber Hose.

TO THE EDITOR OF THE INDIA RUBBER WORLD: In reply to W. H. M.'s letter to you, published in your journal August 15, I beg to say that there is an Asbestos hose covered with rubber made by my firm in Germany, who also make a variety of Asbestos and rubber combined packings. The full address of the firm is Louis Wertheim, Frankfort-on-Main, Germany. I may add that we make a specialty of the Asbestos and rubber combined goods and that we are selling that class of goods

continuously in the United States, notwithstanding the duty of 40 per cent. *ad valorem*. As far as I know that class of Asbestos goods is not manufactured in the States. I beg to inclose business-card and catalogue of our works and shall be pleased to submit samples and prices to any of your readers who would address me here, where we are working our own Asbestos-mine. Very truly,

ED. WERTHEIM.

Black Lake, P. Q., Canada, August 22, 1891.

Prize Awarded for India Rubber Balls.

TO THE EDITOR OF THE INDIA RUBBER WORLD: We beg to inform you that the jury of the German Exhibition in London has awarded to us the diploma of honor, first class (highest award), for India rubber balls. Yours truly,

SACHSISCH-BOHMISCHE GUMMIWAAREN-FABRIKEN
ACTIEN-GESELLSCHAFT.

Dresden, August 5, 1891.

Wanted, Rubber Trees and Rubber Exhibits.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Can you tell us who has a rubber tree that we can get for our exhibit at the Nebraska State Fair, or do you know of any rubber exhibits that have been especially attractive? By giving us information you would greatly oblige,

Yours truly,

LINCOLN RUBBER CO.

Lincoln, Neb., August, 1891.

Rubber-Goods Exports From New York.

THE merchandise shipped from New York finds its way into well-nigh every port in the world open to outside trade. The exports from this city of India rubber goods of American manufacture have extended in point of distribution until, in the course of a year, they are certain to be found in every quarter of the globe. During the five weeks ended September 1, 1891, the amount and value of exports reported under the general heading "India Rubber Goods," according to the Collector of the Port, were as follows:

To—	Cases.	Value.	To—	Cases.	Value.
Amsterdam.....	1	\$85	Ecuador.....	4	106
Antwerp.....	25	2,561	French West Indies.....	1	7
Argentina.....	1	60	Hamburg.....	45	3,367
Belfast.....	3	43	Havre.....	71	6,955
Berlin.....	4	405	Hayti.....	8	92
Brazil.....	14	980	Hong Kong.....	4	145
Bremen.....	4	275	Japan.....	19	302
British Australia.....	78	3,147	London.....	40	3,682
British Honduras.....	1	23	Mexico.....	21	1,247
British West Indies.....	6	108	Milan.....	23	5,608
Budweis.....	1	86	Peru.....	9	786
Central America.....	17	957	Porto Rico.....	1	11
China.....	8	674	Rotterdam.....	11	945
Christiania.....	8	564	Sao Domingo.....	1	22
Colombia.....	16	708	Tasmania.....	1	21
Copenhagen.....	2	121	Venezuela.....	69	419
Constantinople.....	20	455	Zurich.....	5	314
Cuba.....	13	654			
Dutch East Indies.....	1	15	Total.....	569	\$36,218
Dutch West Indies.....	5	143			

The amount of crude India rubber exported during the same time from the port of New York is thus stated:

To—	Packages.	Value.	To—	Packages.	Value.
Bremen.....	10	\$1,832	Liverpool.....	1,124	67,389
Hamburg.....	19	1,800	London.....	100	29,000
Havre.....	20	904			
Hull.....	180	45,880	Total.....	1,453	\$136,415

India rubber scrap was exported to Havre to the value of \$419 and to Glasgow to the value of \$2713.

A BOOK, the leaves of which are made of blotting paper, with a transparent celluloid cover, through which shows a handsome advertisement of mechanical rubber goods, is what the Boston Belting Co. are giving to their friends of late.

The Rubber Movement at Boston.

THROUGH the courtesy of Hon. A. W. Beard, Collector of the Port at Boston, THE INDIA RUBBER WORLD is enabled to present a statement of the India rubber imports and exports at that point for the month of August. The importations of crude rubber were:

	Pounds.
August 1—By the <i>Nesmore</i> , from London, 64 cases	
Tamatave rubber (Africa).....	15,533
Also, 37 cases Nossi B (Africa).....	8,801
August 13—By the <i>Roman</i> , from Liverpool, 17 casks	
African.....	11,268
August 17—By the <i>Samarina</i> , from Liverpool, 29 casks,	
not specified.....	6,812
August 18—By the <i>Milanese</i> , from London, 10 cases, not	
specified.....	2,171
August 25—By the <i>Kehrweider</i> , from Hamburg, 12 casks	
Sierra Leone twist.....	6,265
August 27—By the <i>Kansas</i> , from Liverpool, 18 casks	
and 20 cases, not specified.....	15,928
August 31—By the <i>Mentmore</i> , from London, 13 cases	
Tamatave	3,250
Total.....	70,028

The value of the above was \$34,503. The exports for the month were 2875 pairs of boots and shoes, valued at \$1664 and other manufactures of India rubber valued at \$11,999.

A Consolidation at Reading.

THE Reading Rubber Works and the Kalloch Manufacturing Co. of Reading, Mass., have consolidated, the new concern being known as the Reading Rubber Manufacturing Co. The president of the new concern is John Hopewell, Jr., of the firm of L. C. Chase & Co., and the treasurer is B. Thatcher Morrison, who was also treasurer of the Reading Rubber Co. The goods to be manufactured will be carriage cloth and horse goods, which L. C. Chase & Co. will handle. The manufacture of mackintoshes and fine clothing will be under the superintendence of Fred. Kalloch, as formerly. Among the new directors are W. I. Taylor, A. W. Gove, F. W. Breed, W. E. Barrett, and L. C. Chase & Co. This latter concern are known as very successful supply men in the carriage goods business, and their acquaintance with large buyers will without doubt be of benefit to the business. Treasurer Morrison has put in some hard work in the past, in building up the business and while his last year's output of manufactured goods was large, he plans to double it this coming year.

Golden Sulphuret of Antimony.

THE advocates of Golden Sulphuret of Antimony claim for it peculiar qualifications in vulcanization not found in the ordinary methods, which they say does not take up the sulphur, but leaves an acid which in time has an injurious effect. They claim that the antimony must be of a superior sort, and that the foreign imported into this country does not have the proper qualities, but has an injurious acid in it. To show its peculiar efficacy the Atlas Chemical Co. point with pride to a piece of hose vulcanized with Golden Sulphuret of Antimony which they have had in use in their works since 1884, and which is often utilized for the distribution of acids, it showing very little if any of the wear and tear usual in mechanical goods. Some of the red bands on their papers have been in use since 1881, a desideratum in qualification appreciated by those who are in the habit of handling musty papers. The treatment of

inferior compounds abroad is chiefly brought around, it is said, in such a way by its use that really poor goods are made to supply in a great measure the place of what would necessitate a better article with us.

A Good Horse-Shoe Pad.

A ST. LOUIS veterinary surgeon, after trying the horse-shoe pads made by the B. S. Hall Co., of Malden, Mass., thus writes: "The protection of the horse's forefoot is a great problem. A great many devices have been invented and tried, but so far none have been found to prevent soreness and the early stiffening on these granite pavements that make any horse worthless. I estimate that a horse weighing 1000 pounds, and going at a 3.30 gait, strikes a ton with each forefoot when he puts it down. If this figure is correct, it doesn't take a practical horseman to see the folly of driving good stock on these granite streets. A shoe has recently been devised that may improve the situation, and I'm now giving it a trial on my own stock. It consists of a rubber oval band about a quarter of an inch thick, terminating at the ends in a heavy cork or Cushion. Its general shape is that of a horse-shoe, the rubber Cushions representing the heel corks. An iron-plate shoe goes with this, and the heel ends are shortened, to give room for the rubber cork. The rubber shoe goes against the foot, and is nailed on with the iron shoe, the whole forming an iron-plate shoe with rubber heel corks. I believe the invention is destined to take the place of all other plate shoes."

A Prosperous and Progressive Concern.

THE Boston Belting Co. were established in 1828, and are the oldest and largest of the manufacturers of mechanical rubber goods in the world. They have a world-wide reputation for the excellence of their manufactures. They give employment to nearly 500 operatives, and use nearly 6,000,000 pounds of rubber and cotton-duck and cloth per annum in the manufacture of rubber belting, hose, packing and other kinds of mechanical rubber goods. The company have stores in Boston, New York, Chicago, San Francisco and other important cities in this country and agencies in foreign countries. The Manufacturing Agent and General Manager, James Bennett Forsyth, has been with the company more than a third of a century, and is the patentee of most of the useful inventions which have so greatly aided in building up their business. The company are now running night and day to fill large orders on elevator belts, to go to various parts of the country. For this work they have the largest rubber presses ever built, designs for which were made at their own works.

A Great Year for Jar-Rings.

THE fruit season of 1891 has been so good that it is calculated that more rubber jar-rings have been sold within the past six months than during the whole period from 1886 up to the present year. In fact the fruit-jar people who expected a very good business and thought that they had prepared for it, have found that their total manufacture is absurdly inadequate to the emergency that has arisen. This season will long be remembered by the jar-ring men.

THE factory of the American Rubber Co., at Cambridge, Mass., which has been shut down for several weeks, is again running.

India Rubber Plates in Photography.

THE fathers of photography, and for that matter, the pioneers in India rubber manufacture, little dreamed that the day would come when it would be possible to render a photograph in caoutchouc so that it would give prints at a press, or by a hand-stamp. About four years ago I first turned my attention to the subject, and made various experiments, which satisfied me that it was possible to make a block by photographic means which would give a practical India rubber stereotype. The greatest difficulty I experienced was in the matter of ink, and the ordinary method of inking by pads covered by somewhat coarse fabric. As regards printing-ink, it is well known that it injures the rubber, but it gives very fine impressions, and is easily applied. If the printing-ink is not allowed to remain to dry on the surface of the India rubber cliché, a large number of impressions can be obtained before any injury is done. With the ordinary inks, made for rubber stamps—viz., with aniline colors, glycerine and water—of course no injury is done. But as generally made and used, I found that they gave washy, sloppy, or blocked-up prints. Much of this was due to the kind of pads supplied for rubber stamps, but also to the imperfect manufacture of the inks.

I reflected that if I could get the glycerine ink to "distribute" with a roller like printing-ink, I should obtain what I wanted. I tried printer's roller-composition, thinking that, on the principle of the "graphs," it might deliver the color; but I found that it absorbed the ink, and refused to part with an atom. Having by me an old India rubber roller I next tried this, and found it all I could desire, if the ink were of the right consistency. After many experiments I succeeded in making glycerine inks, which worked with the roller as easily as printing-ink. Indeed, I might say the glycerine ink worked more easily than printing-ink used with metal blocks. By using the rubber roller even with the ordinary stamp-inks, much better impressions can be obtained from hand-stamps than by using the cloth-covered pads. An India rubber roller can be easily improvised. I made one out of 1½-inch rubber tubing. Any one can do the same. Proceed thus: Say you want a roller three inches long—a useful size—you can buy a piece that size very cheap at any of the rubber shops. Slip the tube over a small wooden stock rather larger in diameter than the bore of the tube. This makes it fit tight. Through the stock run a hole for a stout wire, as axis. Fasten the projecting ends in a suitable handle. Now take a flat piece of glass and pour upon it a little of the ordinary stamp-ink. Warm the plate, and thus drive off all the water in the ink. Proceed to "distribute" the ink on the plate with the roller. Lastly, pass the roller backward and forward a few times over the rubber-stamp. It will be found, when the impression is taken, that the result is much cleaner than when cloth pads are used. I have also obtained good impressions by using a dabber made of silk, similar to that used by etchers for laying grounds. I have also used leather. But the advantage is with the India rubber roller, and it has also the good quality of being easily washed, and thus the same roller will serve for various colors.

Those who prefer the pad method can proceed as follows: Take one of the ordinary cloth pads, and a piece of thin vulcanized rubber. Strain the rubber over a pad by means of a metal frame. "Distribute" the ink with the India rubber roller on the pad. Dab the stamps on it two or three times; the result will be a clear impression. This kind of pad can be easily washed and used for various colored inks. It is not absolutely necessary to strain the rubber over the pad. A piece of smooth vulcanized rubber, on which the ink has been distributed, answers as well.

The stamp-inks now in use will not stand if subject to moisture after printing. I have succeeded, however, in manufacturing glycerine inks, impressions from which can be plunged into water without obliteration; or the prints can be treated with mordants, after the manner of calico printing, and this either upon paper or fabrics. In fact, the India rubber clichés of any size can be bent round rollers, or used flat for calico-printing or paper-hangings. By using mordants, not only is fixation secured but many pleasing modifications of color. Among the important uses of India rubber stereotypes is glass and china decorations by burnt-in colors. Vitreous colors can be applied either in the form of a suitable prepared ink, or by the dusting on of the colors, either over the already printed colors—and thus enriching it—or on a print taken with a sticky medium. The glass and china surfaces can, of course, also be printed on without burning in, but would require protection if wished to remain uninjured. In like manner the India rubber surfaces can be used for wood, metal or stone.

By means of the process I have worked out, rubber and other elastic surfaces can be made for decorative or printing purposes from photographs; drawings done with brush or pen, whether in inks, oils, water-colors, or pencil; and from prints, whether copper-plate, lithographic, or letter-press; in fact from any thing that will photograph.—DUNCAN C. DALLAS in *Photographic News*.

Narrow Escape of Rubber-men.

IN the Park Place horror, in New York, in which so many lives were lost by the falling of a building, two rubber-men, at least, had a close call. James Dewson, of Williams & Dewson, looked behind him and saw a heap of ruins where he was leisurely walking a few seconds before. Fred. Doty, of the Atlas Rubber Co., had just turned the corner of the street, having passed the fatal spot a minute before.

"We lost \$2000 by damage by water, and the insurance people have settled," said Mr. Doty. "We moved from that fatal building May 1, and of course we cannot be too thankful for the reasons that led us to change. In light of what has occurred we can now see that the vibrations of the building which we noticed were dangerous, but of course we did not apprehend any danger then. Mr. Herbert is out West, but he must be stepping around lively when he thinks of what might have been. This is the second loss by fire we have had since we moved, but we feel very comfortable now."

Gutta-Percha in Borneo.

A REPORT from an English consul on the productions of Borneo contains considerable information about the gutta-percha that is found there. As is well known, the best quality is yielded by the species of tree known as the *Dichopsis gutta*. There are, however, many other kinds of inferior quality, and in the mixing of these with the best quality, and getting a better price than the goods are worth, the native collectors are experts. The natives in collecting the gutta go into the old jungle and finding a tree old enough to be cut—or by rare good luck, now that they are so scarce, finding one of the red kind that may be 100 or 150 feet high—they cut it down, sever the top, and then ring the bark the whole length of the trunk at distances of about twelve inches apart. For a number of days the sap gradually drains out of these cuts, and as it does so is collected in cocoa-nut shells or leaf cups or any convenient receptacles. From these cups it is put in a pot and boiled for about thirty minutes in a little water. It is absolutely neces-

sary that the milk be boiled to prevent it from hardening on exposure to the air, as it would seem to do, and then be valueless. India rubber is found in the same country, being obtained from varieties of woody climbers, which grow a hundred feet in length, and about ten inches in diameter. There are a great many more of these rubber vines throughout Borneo than of gutta trees. The gutta tree when cut down is entirely destroyed; the vines, however, when cut or hacked, will send forth suckers, and grow up again very readily. Aside from this, the vine produces a fruit that is edible, which the natives prize very highly.

Eucalyptus Gum and Oil.

AN oil and a gum that are of importance in commerce are derived from the leaves and bark of the eucalyptus. The oil itself is exceedingly volatile, and is very widely used as a solvent for various gums, particularly kauri gum, asphalt, and the various copals. It has also been applied with success in dissolving India rubber for surgical purposes. The odor of the oil is very pleasant; that from one tree resembling citron; that from another the verbena, so much so that the oil is sometimes mistaken for verbena oil. The gum of the eucalyptus exudes from the bark, or may be found in fissures in the crack of a tree. It is very astringent, and has been sold under the name kino, but has been collected so clumsily that it has not been disposed of readily in the market. It was thought at one time that this might have a great outlet for tanning purposes; and indeed, it is so used; but the resinous quality of the gum is in that line something of a detriment. Numbers of companies have been formed, one particularly at Tasmania for the purpose of distilling oil from the eucalyptus trees which grow very abundantly in that country. The oil is used in the manufacture of soap, for which purpose a great deal of it is sent to England and the Continent.

MR. ACTING-CONSUL CHURCHILL, who reports on Mozambique, places in a list of the chief products of the vegetable kingdom, of local commercial importance, the following rubber and resinous plants: Various ficus, landolphia creeper, copal, cashew, and acacia. The approximate exports of rubber from the Mozambique district last year, he says, amounted to about 100 tons, exported in gunny bags. The rubber crop was an ordinary one, and equal to that of the preceding year.

If rubber shoes are properly fitted to the wearer they will generally do good service. If the rubbers are too short, or too small, or if the heels of the leather goods, over which they are worn, are larger than the heels of the overshoe, or if they have an uneven tread, they are liable to break out. Salesmen should exercise care in fitting the customer, and never allow the sole of the leather shoe to project over the side of the rubber; failures from the above cause are not the fault of the manufacturer, and if salesmen will follow the above rules, they will save much annoyance, and obviate many complaints about rubbers not wearing.

THE *London Lancet* describes in detail an arrangement to assist one in deep breathing. It consists of a cord encircling the chest, tightened by a weight hanging down the back. The theory is that the lungs being pressed by the cord will rebel and insist upon being filled more thoroughly than they would without the use of this curious irritant. If this theory be true why would not a rubber cord do the work just as effectively without the dangling weight?

Somewhat Personal.

MR. A. STRAUS, of the New York Belting and Packing Co., after his return from a nine weeks' visit to Europe, waited in New York for a few days of rest and then plunged into the West on a business trip.

—Mr. Charles Loewenthal, of New York, returned home from Europe on the *Columbia*, arriving on August 29.

—Captain Willard L. Candee, of the International Okonite Co., returned home from a trip to Europe on August 29. Some of his friends in New York connected with the Twenty-third Regiment chartered a tug, kidnaped him from the steamer and brought him up the harbor with the usual festivities incident to such an occasion.

—The movements of the officers of the American Rubber Co. have been as active as ever during the past month. E. H. Paine, the general agent, passed through New York early in the month on his way to Richmond, Va. G. B. McLellan, the New York manager, has made an extensive trip through Maine. J. W. Wallace has been to Philadelphia, his favorite stamping ground in a business sense. E. F. McGovern has been selling *rafts* of goods in New York State. G. B. Wittner has been talking to advantage with the Pennsylvanians. W. E. Langley, the veteran in the mackintosh department, has been investing some spare change among the farmers in Michigan.

—Miss Rose Coghlan, in a recent presentation of "As You Like It" on the lawn at Kenmore Hotel, did not wish the representation to be put off on account of a slight storm but was perfectly willing to go on in rubber boots. The audience, however, were not willing.

—C. M. Clapp, proprietor of the Aetna Rubber Mills, who was reported to have been seriously ill again, has with wonderful recuperative power, recovered, and has lately been out to drive in the vicinity of his Roxbury home.

—It is rumored that Henry W. Burr, formerly superintendent of the Pará Rubber Shoe Co., and later of the Granby (P. Q.) Rubber Co., is to take up his residence permanently in South Framingham, Mass.

—Plug Hat Mountain is the new name of a mountain in Northern Maine and the name came this way: Mr. George H. Barney, of the Barney Ventilating Fan Co., of Boston, took his vacation at Round Mountain Lake this summer. In spite of the smiles and jokes of the guides and campers he wore a tall hat all through the hunting and fishing and tramping that he enjoyed. The day that he left, he climbed a lofty pine and cutting the top down a little, lashed the hat on its highest point, and there it remains in full sight of the camps, adorning the top of "Plug Hat Mountain."

—Mr. A. Randolph, manager of the Stoughton Rubber Co., is back from the Adirondacks, and deep in business again. His rest evidently did him good, for he looks browner and fresher than before he went away.

—It has been remarked more than once that the portrait of Vianna given lately in THE INDIA RUBBER WORLD, bears a close resemblance to President Sawyer, of Philadelphia, of the Mercer Rubber Co.

—The young men of the Tyer Rubber Co. have started out early this fall. Mr. Sargent and Mr. Burnham are already back from short trips. Mr. Jones is doing Canada, while Mr. Harney is somewhere in or about Texas. Even Mr. Carleton, who is usually to be found at the factory office in Andover, Mass., is in New York on a two weeks' business trip.

Trade Notes.

A NEW concern in Boston and one that will find many friends is the Enterprise Rubber Co., of No. 114 Bedford Street—wholesale dealers in rubber boots, shoes and clothing. The members of the company are two gentlemen formerly with the Pará Rubber Shoe Co.—Joseph L. Allen, and W. E. Barker. Both are well known to the trade, and have a reputation of being able to "get there" in good shape.

—The Boston India Rubber Manufacturing Co. is the name of a concern which practically succeeds the Boston Car Spring Co., although in another line. The goods that Mr. Lothrop proposes to manufacture now are all kinds of clothing; and he has for superintendent Mr. M. L. Derrick, an old rubber clothing man.

—President Overman of the Overman Wheel Co. is delighted with the way his new rubber factory is panning out; indeed, he personally has got to be quite a rubber-man, and talks of "Up River Pará" with a gusto that is quite enchanting.

—The local paper in Colchester, Conn., felicitates the people of the town upon the good work that the Colchester Rubber Co. are doing in improving streets and sidewalks near the mills.

—The sheriff has taken possession of the factory of the Fibrone Manufacturing Co., at No. 300 Monroe Street, New York, on executions for \$19,704. The company manufactured fibrone and plasticon, in competition with celluloid and zylonite. The company was incorporated in January, 1890, with an authorized capital stock of \$60,000, which was increased in March last to \$100,000. The company succeeded Riehle & Steinberger, who had started the business five months previously. Mr. Steinberger, the patentee, continued as president. A large amount of money was spent on the plant and in pushing the business, which was increased so as to manufacture electrical and telegraphic appliances. Thomas H. Wheeler, the largest judgment creditor, is a director of the company, and is of Hyde, Wheeler & Co., of Boston. On July 25, the company gave Mr. Wheeler a chattel mortgage for \$14,748 on machinery.

—There is a probability of re-establishing the gossamer works at Granby, P. Q., with Albert H. Nourse as superintendent.

—A \$1500 fire is reported as occurring in the establishment of William Maas, maker of horn, rubber and ivory goods, at No. 2420 First Avenue, New York. The cause was unknown.

—The Tyer Rubber Co., Boston, expect to occupy their new factory office about the middle of this month.

—The Ideal Rubber Co., of Brooklyn, have filed with the State Department a certificate of increase of their capital stock from \$30,000 to \$50,000. Its liabilities are \$9,556.41.

—An attachment has been placed on the Union Waterproof Shoe Co., of New Haven, Conn., for \$3000 in a suit brought by C. C. Munson to recover this sum on a note for borrowed money. The concern is at present in the hands of a constable. The president is ex-Mayor Lewis of New Haven, and William Minor is the secretary and treasurer.

—A plant for the manufacture of rubber stamps, rubber type, dating machines, pencils, stencils, check protectors and novelties, has been established in Fort Wayne, Ind.

—The H. W. Johns Manufacturing Co. Corporation has been formed, embracing all the asbestos manufactures of the country. The factory at Baldwinville, Mass., is a principal one of the syndicate.

—Jeremiah Shea, of Boston, Mass., charged with larceny of 395 pounds of rubber, the property of the Fitchburg Railroad Co., was recently sentenced to six months in the house of industry.

—Ed H. Soule, the superintendent of the Phoenix Packing Co., has resigned that position, and accepted the position of general manager of the Kansas City Oiled Clothing Co. Mr. Soule leaves the Phoenix Packing Co. with the best wishes of both employers and employés.

—Henry S. Tufts, lately with the Pará Rubber Shoe Co. of South Framingham, Mass., is to establish himself in the reed and rattan furniture business in Chicago as a jobber.

—Articles of incorporation have been filed in the County Clerk's office at Newark, N. J., by the Chalk Rubber Co. The concern will manufacture specialties in rubber goods and insulated wire in East Orange, on a capital stock of \$50,000, fully paid up. The incorporators are John B. Walsh, Timothy C. Chalk and James P. Meehan, of Providence, R. I., and Hugh McConnell, East Orange, N. J.

—The trouble with the cutters at the works of the Woonsocket Rubber Co. has been satisfactorily adjusted, and an extra large ticket is being run at present.

—The factories of the National Rubber Co. at Bristol, R. I., after a brief shut-down for stock taking are running again on full time.

—A fire in the Farwell Building on Monroe and Market Streets, Chicago, somewhat injured the stock of goods which the Woonsocket Rubber Co. carries there. The injury, however, was chiefly done by smoke and water, and will be easily repaired.

—The American Rubber Co. are placing on the market a high button gaiter in which the whole staff takes pride. It has ten buttons, and is almost if not quite as serviceable to the woman as the boot is to the man.

—The engineering department of the Emerson Power Scale Co., of Boston, are out with a circular, calling the attention of manufacturers to the work they have done during the past year. Not only do they measure the power used by any machine or series of machines, but they make a specialty of economizing power. An examination of rubber mills should develop some interesting facts in this line.

—The strikers at the works of the Manhattan Rubber Co., Setauket, L. I., have accepted the cut on the price of shoes and gone back to work.

—The excavation for the wheel-pit for the new dynamo at A. G. Day's rubber mill at Seymour, Conn., is dug nearly to the full depth. It has been slow digging, as it was necessary to blast through about fifteen feet of solid rock. One blast threw a heavy piece of stone through a window, narrowly missing two men at work in the mill. Another was set off at noon time and as one of the men was getting something from his coat a large piece of rock came crashing through the window striking above his head.

—Max Beer was arrested recently in New York by the sheriff's officers in an action to recover \$4350 brought by Emanuel and Simon Steinhardt, Alexander B. Orr and Christian P. Laubheimer, of Bluefield, Nicaragua. Mr. Beer lived at Prince Pulka, Nicaragua. The plaintiffs say he promised to sell them all the rubber he secured in Nicaragua, in consideration that they sold their goods to him. They sent him goods worth \$4350, but he did not pay or give them the rubber, but sent it to the United States. He gave \$5000 bail and was released.

—The Cable Rubber Co. of Jamaica Plain, Mass., have closed their factory, owing to the dullness of trade. It is not known when they will start up again.

—The list at the Woonsocket Rubber Co.'s works, recently reached the high figure of 8385 pairs of boots, which is an output of nearly 1000 pairs more than ever was produced in one day in any factory in this country.

—The Magnolia Anti-Friction Metal Co., of New York, have issued a circular to rubber men illustrating the adaptation of their peculiar metal to the bearings of machinery used in rubber factories. The company's metal is now used by eight of the leading governments of the world.

—Williams & Dewson, of New York, are making a very serviceable over gaiter for which they are having a very good sale. The lap is of good size and to overcome the difficulties in securing a good fit by the use of buttons elastic loops of a substantial character accommodate the gaiter to the size of the ankle and leg and thus perform the function desired in the use of these articles.

—Manager McClintock, of the Hall Rubber Store, Portland, Me., looks for a good business this fall, and certainly has made the best of preparation for it. His store looks as spick and span as possible and the lady who cannot find a garment to please her in the large and effectively displayed stock must indeed be hard to suit.

—The Peerless Rubber Co. state that the largest business they ever did in any one month was that of August. A large amount of hose for car-heating purposes is being sold, but the "Rainbow" specialties are deserving of a special boast.

—The bad break in the credit of the Union Pacific did not seem to have caught the rubber men. It was expected and dealings with the company were shunned. Railroad companies are generally good pay, a delay of 30 to 60 days being, however, unavoidable, owing to a routine necessary in auditing, approving and paying of bills by different officers of large organizations.

—The Lockwood Manufacturing Co., of East Boston, Mass., have just taken a large order from the Thomson-Houston Co., for building electric snow-sweepers. This, however, will not interfere in the least with the filling of all orders on mould work or general machine work, that the rubber mills may choose to send in.

—It is stated that the Southern Brokerage Rubber Co., of Chattanooga, Tenn., have opened an office in Knoxville, that State, for the purpose of doing a general brokerage business in all kinds of rubber goods, including rubber boots and shoes, rubber belting, packing and hose.

—Mention is made that the American Rubber Co. have received a good order for goods from Holland.

—The company which built a rubber manufacturing plant at Galesburg, Ill., this year, in consideration of a \$30,000 bonus from the lot owners, has been enjoined, it is reported, from disposing of the property. The bill charges the company with fraud and with attempting to sell the factory without the knowledge of the owners.

—The application of the Vulcanized Fibre Co., of New York, for a preliminary injunction restraining Edward M. Taylor of Wilmington, Del., from using vulcanized fibre in the manufacture of chair seats, backs and like articles, on the ground that it was an infringement of their patent, has been refused, the court holding that the substance used by the Vulcanized Fibre Co. was not patentable, and was a discovery, rather than an invention.

—Letters patent have been issued incorporating Dr. Joseph Godbout, William H. Brouage de Lery, Cyrien Fortier, Taschereau Fortier, Philippe Angers, P. F. Renault, Louis Mathieu, of St. Francis, Beauce; the Hon. Charles Langelier, L. P. Pelletier, of Quebec, and the Hon. J. E. Robidoux, of Montreal, for the purpose of carrying on an asbestos trade in the region of Beauce, under the name of The Beauce Asbestos Co., with a capital stock of \$10,000.

—Both factories of the Boston Rubber Shoe Co., at Edge-

worth and Fells, which were shut down for two weeks have started up on full time. About 3000 persons are employed. It is understood that they have orders enough to keep both factories going until next spring.

—A. Smith, of Pittston, Pa., has brought out the rubber goods establishment conducted by A. P. Locke.

—The sheriff sold on August 26 a lot of rubber goods belonging to C. W. Thompson & Co., of Easton, Pa. The seizure was at the instance of J. V. Smith, who acted as agent for the firm, and who, failing to receive any compensation had the goods attached some time ago and obtained judgment.

—John M. Plummer, grinder of and dealer in rubber scrap, No. 13 Federal Street, Boston, has gone into insolvency. Mr. Plummer is part owner of the Pierce rubber mills at Danversport and also the Underwood Weather Strip Co. at Charlestown, Mass.

—Philip P. Dunn, who figured conspicuously in the failures of the Star Rubber Co. and the Trenton China Co., died August 28, at Spring Lake, N. J. He was sixty-six years of age, and had for twenty years been the President of the First National Bank. He resigned after the failure of the companies. He died insane.

—Mr. George B. Hodgman, secretary of the Hodgman Rubber Co., New York, sailed on the *Teutonic* on August 26, for a six weeks' vacation in Paris and London.

—Recent visitors to THE INDIA RUBBER WORLD were Mr. Persse Deverell, of the Page Belting Co., Mr. Carlton, of the Tyer Rubber Co., and Mr. N. C. Durie, of the rubber department of Ripley & Bronson, St. Louis.

—In a letter from the Missouri Rubber Co., St. Louis, they write: "Trade is splendid with us. Crops in the West and Southwest are immense—cotton being too much so at present to bring big prices."

—Teale & Morrow, dealers in rubber goods, Brooklyn, N. Y., have assigned to C. R. Braine.

—Edward Roat is about to open a rubber store in the Bascom hotel at Bethel, Vt.

—The New York Belting and Packing Co. have declared a half-yearly dividend of 4 per cent. on the preferred and five per cent. on the common shares, payable October 1 to the record of September 9.

—The price of fine Pará rubber is stated to have averaged 75 cents a pound for the past ten years.

A Rubber Factory Burned.

AN Associated Press dispatch dated Birmingham, Conn., September 11, says: The mill of the Derby Rubber Co. was burned this morning. The fire originated in bagging stored in the building, and spread so rapidly that it was impossible to check it. The entire plant was destroyed. The mill was leased by the Rubber Reclaiming Co., of Trenton, N. J., and had been idle nine months while being repaired. New machinery worth \$1000 had just been put in, and the mill started to its full capacity last Monday. One hundred tons of stock was destroyed. Total loss \$50,000; insurance \$30,000.

A NEW rubber belt that has just been patented has a ribbed surface, the fluting running across the belt. These belts are claimed to be positively non-slipping and unaffected by dust and dirt. In cases where slipping is persistent, a tire of the same material is placed on the pulleys, and the contact of the two fluted surfaces renders slipping an impossibility.

Gum Digging in New Zealand.

THE natural products of New Zealand are numerous and varied. Gold, silver, copper, iron and coal are widely distributed over the islands. Great forests full of timber (lumber) suitable for almost any purpose, cover large tracts. Flax (*Phormium tenax*), used and exported for cordage, binder twine, etc., is very abundant.

But the product most interesting is kauri gum. This is the sap of kauri trees growing in forests which decayed centuries ago. In some unexplained manner this sap found its way into the ground, where it remained long ages after the parent kauri tree had decayed and disappeared. Kauri gum is not a fossil gum. It is simply congealed "sap," exposed for an unknown period to various vegetable acids and hardened or cured by them. These acids dissolve the outer surface of each piece of gum and render the outer covering friable and worthless for high class varnishes.

Kauri gum also exudes from living kauri trees. In this state it is known as tree gum, new gum or bush gum. Some of this gum is obtained by climbing the trees, some is dug from the heaps of decayed bark and leaves usually found at the base of great kauri trees.

Fifty years ago the Maoris (the aboriginal inhabitants of New Zealand) were the only gum diggers. They brought small quantities of kauri gum to the Europeans who had settled in the bays north of the city of Auckland. For a long time nobody knew its use or value. About the year 1854 kauri gum had become of some value, and during the few following years it steadily increased in price, till about 1863, by which time its high qualities had become known, and the price advanced accordingly, with an export of 1400 tons for 1863.

From that date its high value for varnishes has been recognized and its use in the arts greatly extended, until in 1890 the quantity exported was 7499 tons. For many years kauri gum was dug from the ground by Maoris only. Later on Europeans began to dig, until to-day five-sixths of the kauri gum exported is dug by white men. Over large areas of the north island of New Zealand, north and south of the city of Auckland, thousands of men are at work all the year round digging gum. In such a genial and beautiful climate as North New Zealand, where ice, snow and blizzards are unknown, gum digging is a favorite occupation. Every man lives in tents or rough huts, on food in which canned fruits and meats are large elements. The gum digger's life is not an unhappy one. Working in the open air in a splendid climate, full of independence, with enough of speculation in the occupation to give a zest to his outdoor toil, the gum digger, if industrious, frugal and sober, need call no man traster.

All sorts and conditions of men are found in the ranks of the gum diggers. Small farmers dig on their own freehold farms. Clerks, laborers of all sorts, new chums and old hands, men skilled and unskilled, broken down aristocrats, tinkers, tailors and candle-stick makers, with "ne'er do weels" of many sorts, help to make up the army of gum diggers. Queer customers though some of them are to begin with, healthy work in the open air, a genial climate and a grand spirit of independence hammer the motley crowd into "men for a' that" of which any country might well be proud.

The gum digger's capital does not bother him much, it is not big enough. His outfit costs but little. A small tent or a rough hut of bark, slabs or rushes, a tin "billy" (kettle), a tin panniken, a pair of blankets, a pick, a spade, a gum hook and a gum "spear" (like a long thin bayonet) are all the outfit he needs. His food he procures from the next store where he sells his gum,

Probing the ground near his camp with a gum spear, he feels or hears a grating sound, which tells him he has struck gum. Then he digs down, sometimes to find a piece of gum no bigger than a walnut; sometimes, though not often, a piece of ten pounds or twenty pounds in weight.

The gum he digs by day he roughly scrapes at night or on wet days. In summer he digs for gum in swamps in which ancient forests lie buried. In winter he digs on the hills or plains.

The total quantity of kauri gum exported from the port of Auckland from 1850 to 1890 was about 134,000 tons. Notwithstanding this large export there are no signs of the supply of kauri gum being exhausted for a long time. In gum fields long since supposed to have been exhausted gum is being found at lower depths.

Gum is found on bare plains where no trace of a kauri tree exists. It is also found under living forests, where scarcely a single kauri tree is growing. For in New Zealand one kind of a forest seem to have grown to maturity and then decayed, to be followed by another of different kinds of trees growing on the ruins of the old. The latest instance of this kind has just occurred in the discovery of a rich gum deposit under a living forest of "kahi katias." It is believed that this new gum field will be found to extend possibly over 100,000 acres or more, in which kauri gum was not hitherto supposed to exist.—*Varnish.*

A Boston View of Vianna.

THIS man's career was made possible by London bankers who, in times past, have had reputations for being conservative, says the *Boston Commercial Bulletin*. He could get little or no financial aid in New York or Boston, notwithstanding he made a special trip to America this spring in order to seek this aid. The American importers, however, both in New York and Boston, placed little faith in the ability of this rank speculator to succeed at the high prices then ruling and he was forced to go to London, where he obtained further assistance. The American importers took the opportunity of unloading their holdings so that their entire stocks which they owned aggregated less than 100 pounds. They were therefore in a position to take advantage of the decline forced by the London people and purchased the majority of the rubber that was sold, averaging about 60 to 63 cents for old rubber.

Vianna's bankers having relieved themselves the market has now advanced and sales were made in London, Wednesday (September 2) at the equivalent of 67 cents landed here for old crop fine. The manufacturers have been free buyers and the aggregate of their purchases cover a large amount, although they have not yet commenced to supply themselves for their winter requirements, fearing further decline, which does not now seem likely to take place.

Vianna operated through two corporations, one a Rio corporation called the *Empreza Industrial do Gram Pará*, headquarters at Rio, and the *Companhia Mercantil*, headquarters at Pará. The former was the larger company with a capital of \$10,000,000, ten per cent. paid in; but stockholders under the Brazilian laws are liable for the entire capital stock, and steps are now being taken to make a call for the balance of the stock under which Vianna expects to obtain a further large amount of money with which to organize a new campaign for the coming crop. The *Companhia Mercantil* are also reorganizing, cable advices report with good prospects of success.

This is the fourth failure that this remarkable man has made in the handling of rubber, but he seems to have unlimited resources and unlimited friends who seem always standing ready

to give him another chance. This is the more easily explainable when it is remembered that the interest of the Amazon Valley is to force high prices for rubber, and even if the party operating on the bull side makes a disastrous failure and loses the money of his stockholders, he nevertheless has forced the world to purchase rubber at high values during the crop which more than pays the gatherers and merchants the comparative amounts which they contribute toward the share capital of the company.

It can safely be asserted that the demand for rubber this fall and winter is sure to be phenomenally heavy owing to the cautiousness with which manufacturers throughout the world have been buying for the last twelve months, for at these prices manufacturing of rubber goods is very profitable. It was predicted that the present crop, owing to high prices that have been ruling, would be very early and very large. The crop commences upon the 1st day of July, but up to the present it has been thus far, these two months, a little smaller than for the same two months for the preceding year.

India Rubber Brake Blocks.

INDIA rubber brake blocks have great advantages over those of wood or iron for road vehicles; but hitherto great difficulty has been experienced in fixing them to the shoe, owing to the rubber becoming disintegrated where the bolts pass. M. Michelin et Co., of Clermont Ferrand, get over the difficulty by forming the rubber block with a dovetail at the back and making the shoe to correspond, both being slightly tapered so as to permit of easy introduction. The rubber block is inserted in its shoe with an easy fit, and the tightening of the block on the wheel spreads the dovetail out against the sides of the shoe, giving all the necessary adhesion between the two surfaces.

The Evils of Dating Ahead.

THIS evil, like many another, arose out of a very sensible custom. In placing his order several months ahead, the buyer is making a concession to the manufacturer, in this way: He is speculating on the future state of his trade for the sole benefit of the manufacturer, that the latter may have time to fill his orders, while the retailer runs all the risk without sharing any of the benefit. If retailers could place their orders just as they feel the need of the goods, and get them at once from the manufacturer, a great part of the speculative side of the business would be removed, and a great problem solved.

As it is, however, manufacturing has not been brought up to the stage of perfection necessary to bring about such results. Time is needed by the manufacturer of shoes; the purchaser makes him somewhat of a concession, although a necessary one, when he places his order three and four months before the date of shipment.

Obligation being thus incurred by the manufacturer, it behooves him to offset it by favors to the purchaser. The latter allows the manufacturer sufficient time to produce the goods, but he does not consent to the latter's dating his invoice and shipping the goods at a time when they are not needed, or there is no sale for them. The bill must be dated at a time when the retailer begins to need the goods. This is the concession the manufacturer is in duty bound to make, in return for that made to him by the purchaser who places his order months ahead.

So far as the system runs, theoretically, mutual concessions should be made, and no further. Few manufacturers will be found who will complain of the system as observed thus, in its

rightful bounds. It is the overdoing the thing of which complaints are made. So long as buyers are to be found who will ask excessive privileges, and sellers who are weak enough to grant them, the trade will be troubled with this and kindred evils. It is but another manifestation of the same spirit that induces cutting of prices to ruinous figures.

Whether the evil may be in part remedied by the united action of the wholesalers, remains to be seen. If it can be done at all by this means, it must be through the agency of local combination. An agreement between Western and an Eastern wholesaler will be of no account when in the city with either are wholesale houses that will agree to propositions which the former reject.—*Shoe and Leather Gazette.*

Rubber Shoes for Walking on a Ceiling.

A PERFORMANCE of considerable scientific interest has been produced recently by a young lady who walks head downward on the ceilings of theatres and is known as the "Human Fly." In order to procure a perfectly smooth surface to walk on, a board 24½ feet long is suspended from the ceiling, and near one end of this is a trapeze. The lower surface of the board is painted, and is smooth and polished. The performer is equipped with rubber pneumatic attachments to the soles of her shoes. Sitting in the trapeze with her face to the audience, she draws herself upward by the arms and raises her feet until they press against the board. They adhere by atmospheric pressure. She leaves the trapeze, and hangs head downward. Taking very short steps, not over eight inches in length, she gradually walks the length of the board backward. She then slowly turns round, taking very short steps while turning, and eventually returns, still walking backward. This closes the performance. To provide against accident a net is stretched under the board. The performer has frequently fallen, but so far no serious accident has happened.

The attachment to the shoe is in general terms an India rubber sucker with cup-shaped adhering surface. It is a disk 4½ inches in diameter and ¾ inch thick. To its centre a stud is attached, which is perforated near the end. This stud enters a socket fastened to the sole of the shoe. The socket is also perforated transversely. A pin is passed through the apertures, securing the hold between socket and disk. The socket is under the instep and is attached to the shank of the shoe sole.

A wire loop that extends forward under the toe of the shoe is pivoted on two studs which are secured on each end of the transverse central diameter of the disk. This loop is normally held away from the disk and pressing against the shoe sole by a spring. One end of the loop projects back toward and over the rear edge of the disk. A short piece of string is secured to the India rubber and passes through a hole in the extension or rearwardly projecting arm of the loop. The disk when pressed against a smooth surface is held fast by the pressure of the atmosphere. If now the loop is pressed toward the surface to which it adheres, the string will be drawn tight and will pull the edge of the India rubber away from the board. Air will rush in, and the adhesion will cease. As each new step is taken, one disk is made to adhere by pressure, and the other is detached by the action just described.

The power of the disk to sustain the weight of a performer may be easily calculated. Each sucker is 4½ inches in diameter, and contains therefore 16 square inches of surface. The full atmospheric pressure for the area would amount to 240 pounds. The stud and socket attachment provides a central bearing, so that the full advantage of this and of the disk is

obtained, and a fairly perfect vacuum procured. As the performer only weighs about 125 pounds, there is about 115 pounds to spare with a perfect vacuum.—*Scientific American*.

Neatness of the Modern Office.

HOW many people remember the old-fashioned office? It has not been out of style so very many years, if, indeed, it does not exist in some places even now. A room, large or small, as the case may be; walls bare, or at most festooned with dusty cobwebs; windows innocent of curtains or shutters; in the centre a pine table or possibly a dry-goods box to serve as a desk; a few wood-bottomed chairs and possibly a bench or two; a rusty box stove in place summer and winter alike; a box of sawdust in the most conspicuous place on the floor for the benefit of tobacco users—this office was thought to be fitted up well enough. But if the walls were kept clean, the windows washed, the stove removed in summer and returned, blackened, in the fall; if, beside the pine table, were a cherry desk and a plain cupboard with pigeon holes for a letter file, it was elegant.

Nothing denotes the change of ideas in this generation more clearly than our offices and their appointments. Business was then a task—now it is a pleasure. Then wealth avoided it as much as possible; now it seeks it. And with this change come new exactions, so that conveniences are required not only for health, but for advancing work as fast as possible. But more than this. A customer is as much impressed with the appointments of the place where he buys goods as with the goods themselves. Merchants recognize this and study to make their stores as pleasant and attractive as possible. No one nowadays can sell anything out of a shop which smells of molasses and codfish, and is dingy and unswept.

The appointments of some of our first-class offices must be seen to be appreciated. Whole suites of rooms in buildings, light and airy, are devoted to the work of a single firm. The walls are decorated in the highest style of art, the hardwood floors are polished and covered in places with the richest imported rugs. The doors slide noiselessly and the attendant waits in his stately livery. Heavy curtains or screen blinds shut out the light, if desired, and the electric lamps show that art has supplied the deficiencies of nature. Wooton or Cutler desks, artistic in design and marvels of convenience, are placed in picturesque order; typewriting machines—first of all the standard Remington, whose precedence in the long years past is now disputed by the quick working Yost—click in response to the touch of girlish fingers; letter files of elegant design and with pigeon holes innumerable stand against the wall; sofas and easy chairs are scattered around the room in delightful confusion, and though, if it be winter, the steam radiator is keeping a pleasant heat, yet "the crackling walnut log" on the hearthstone diffuses a cheerful light on all around. "No coats are thrown across chairs, no wet umbrellas have stained the floor—every convenience that experience has suggested is there. The telephone hangs on the wall; the phonograph receives orders and transmits them whenever asked; the telegraph is within a few feet of the door; and the elevator puts all on a level with the earth. Fire may sweep the building, but all valuable papers are preserved in the safe. This is no fancy picture. The modern office buildings are constructed with every attention to detail for comfort and beauty, and it is no uncommon thing for the furniture of an ordinary office to cost \$3000.

This change is due largely to our growth in wealth and our absorption in business. The office of many a man is more of a home to him than the place he calls by that name, and why should he not gather about him some of the elegancies of life?

Why should he make business a drudgery? Another thing which has produced this is the presence of ladies in the office. No one who comes in contact with them can feel otherwise than that business life is the gainer by their presence; the air of refinement pervades the atmosphere and the surroundings must be in keeping.—*Investors' Guide*.

A Rubber-Clothing Man Describes his Business.

THE preparation and curing of rubber for heavy clothing is similar to that employed for boot and shoes. The cloth is coated with rubber by the calender; the same care is necessary to insure perfect dryness and evenness to the cloth. The fabric then passes to the cutting rooms. In the manufacture of gossamer clothing an altogether different process is employed. Instead of being calendered the rubber is dissolved with naphtha in a churn made expressly for this purpose. These churns are iron cylinders in which a stirring shaft works in much the same manner as the old dasher butter churn. The mixture is reduced to about the consistency of printers' ink. It is then allowed to run on the cloth, which is rapidly passed under a spreader, which distributes the compound over the cloth as it passes through.

Thus a web of cloth, the ends joined together and forming an endless band, is run under the knife from six to sixteen times, according to the kind of goods to be made. Each time the fabric takes a very thin coating of the compound, the naphtha being rapidly dissipated. The cloth is put on rolls and then taken to the curing tables in the open fields, which sometimes occupy acres in extent. With a favorable sun the rubber cloth will be cured in about three hours, and from that up to days, according to the state of the weather. This process of vulcanizing is known as sun curing, and is not employed for heavy clothing, which is cured in heaters. In vulcanizing boots and shoes and heavy clothing what is known as dry heat is used.

In making mackintoshes, where the water-proof coating is between the outside of the garment and the lining, the goods are coated on a spreader in the same manner as for the other clothing, but a better quality of rubber is used than on ordinary garments.

In making up the garments about 3500 women and girls are employed by the different factories. The cutting is done by men and they are also employed in finishing the mackintoshes and a few in other capacities, but the garments are made up by women and girls. The cutting is done in much the same manner as in the manufacture of regular clothing. Several thicknesses of cloth are laid on a table and cut to pattern at the same time. After cutting, a strip is cemented round the arm-sizes and pockets and over the button flap; pieces are also put on where the button-holes are to come, and all are carefully pressed on by hand rollers. In heavy clothing the seams are cemented and not sewed. Mackintoshes and gossamers are stitched on machines, button-holes made and buttons sewed on. After being stitched the gossamers are folded up in little bags and are packed in cases for shipment. Mackintoshes after being stitched have a strip of cloth cemented over the seam to prevent water coming through the holes made in stitching. The pocket flaps, etc., are then cemented on, and the garment is then vulcanized in the heater. This completes it. This final vulcanizing renders them much superior to English goods for standing the extremes of temperature. In finishing heavy rubber surface lustre clothing the garments are sponged with varnish and vulcanized by being hung in the heater or dry room for about five hours. With dull finished garments the final process consists in sponging with soap and water, after which the garments are aired and vulcanized.

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P.O. BOX 55, BALTIMORE, MD.

Rapid Growth of Assam Rubber.

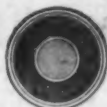
THE following account of Assam rubber is extracted from the *Demerara Argosy*: The tree which goes by the name of India rubber tree (*Ficus elastica*) is not the chief source of the supply of the exceedingly useful commercial product India rubber or caoutchouc, though possibly it may become so in the future, as experiments in the cultivation of the future rubber-yielding plants seem to have been most successful with it. Some fears have been expressed of a stoppage of the supplies of rubber, owing to the careless and wasteful way in which the sources are being worked, and it is reassuring to note that considerable progress has been made in forming plantations of the *Ficus elastica* in Assam. At the Charduas Forest, at the foot of the Himalayas, some monster old rubber trees are found, some of them measuring 129 feet high, with a girth round the principal aerial roots of 138 feet, and round the crown of 611 feet. This forest is very damp, its moist, hot atmosphere being described as, in summer, resembling that of a forcing house. The trees cannot stand shade, and unless the seedlings are fully exposed to light and well drained they cannot grow. Owing to this, it is found that in the depths of the forest, where light and air are shut out by the dense crowd of trees of many species, natural reproduction takes place by the germination of seeds carried by birds high up in the crowns of other trees, aerial roots descending in process of time to the ground, and developing into a huge hol-

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low cylinder round the foster stem, which is soon killed. The descent of the roots may take years, but once they have taken hold of the ground the further growth is exceedingly rapid. In cultivating, the seeds are found to grow much better than cuttings, and these are tended in large nurseries until they are ten feet high, when they are transplanted into clearings made in the forest in strips of forty feet wide, alternating with sixty feet of natural forest, this being found necessary to furnish the requisite moisture, while narrower clearings do not give air and light enough. Trees grown in grass land were found on tapping to yield scarcely any rubber, the difference being attributed to absence of the moisture afforded by the forest. Plants of 1874-75 were found, in April, 1889, to have attained an average height of 61 feet 11 inches, and a girth of 11 feet 5 inches, thus having grown at the very rapid rate of 6 feet 1 inch in height and 9 inches in girth per year.

The "CLARK" WIRE



INSULATION GUARANTEED WHEREVER USED, AERIAL, UNDERGROUND OR SUBMARINE.

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THE rubber used in insulating our wires and cables is especially chemically prepared, and is GUARANTEED TO BE WATERPROOF, and WILL NOT DETERIORATE, OXIDIZE OR CRACK, and will remain flexible in extreme cold weather, and is not affected by heat. The insulation is protected from mechanical injury by one of more braids, and the whole slicked with Clark's Patent Compound, which is water, oil, acid, and to a very great extent fire-proof. OUR INSULATION WILL PROVE DURABLE WHEN ALL OTHERS FAIL. We are prepared to furnish Single Wires of all gauges and diameter of Insulation for Telegraph and Electric Lights from stock. Cables made to order. We are now prepared to furnish our Clark Wire with a WHITE OUTSIDE FINISH for ceiling cleat work as well as our standard color.

CLARK JOINT GUM should be used for making water-proof joints. This is put up in half-pound boxes, in strips about one foot long and five-eighths inch wide, and when wrapped about a joint, and pressed firmly makes a solid mass.

FOR RAILWAY AND MOTOR use, we make all sizes of stranded and flexible cables with Clark insulation. Wire Tables and price list will be furnished on application to

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Free Want Department.

WANTED—Salesman to travel in Michigan and neighboring States with rubber, oiled clothing, boots and shoes, and other staple articles. Must have influence with trade and be willing to travel exclusively on commission. Address, **HENRY WERNER & Co.**, Detroit, Mich. Liberal inducements to reliable party.

WANTED—A second-hand vulcanizer, about 3 by 5 feet. Address, stating particulars, **E. W. HOLT**, 83 Broadway, Brooklyn, N. Y.

WANTED—A first-class man in rubber mills in New York City, to superintend the manufacture of hard and soft rubber goods. Address, stating experience and salary wanted, **Box 21, INDIA RUBBER WORLD.**

WANTED—A first-class man on all kinds of hand work in making-up room in rubber factory making general mechanical goods. Address **RUBBER, P. O. Box 815, N. Y. City.**

A MECHANICAL RUBBER SALESMAN with a good trade wishes to make a change. Address **D. A., INDIA RUBBER WORLD.**

RUBBER MACHINERY FOR SALE; mills, cracker, vulcanizer, 5 ft. by 12 ft., boiler 3 ft. by 12 ft., bolters, pumps, platform scales, &c. Address **Box 574, Trenton, N. J.**

WANTED—A first-class man as foreman in the mackintosh department of a long established concern. Must be thoroughly conversant with the whole business and able to superintend a large force of makers. State salary wanted. Best of references required. Address **H. H. H., INDIA RUBBER WORLD OFFICE.**

WANTED—A first-class salesman for a house carrying a general line of rubber and oil clothing, and boots and shoes. Address, stating previous experience and former route of travel, **C. C., INDIA RUBBER WORLD OFFICE.**

SALESMAN (fourteen years experience on the road and in New York City, Brooklyn and surrounding territory) is desirous of obtaining position with a first-class rubber clothing manufacturer. All references. Address **Salesman, 224 Sixth Avenue, New York City.**

WANTED—Foreman for hard rubber department, who is energetic and progressive, and thoroughly understands the business. Good salary for the right man. Address "Manufacturer," care **INDIA RUBBER WORLD.**

WANTED—Salesmen for South West, North West and Eastern States to carry a line of rubber clothing, oil clothing, gossamer and mackintosh clothing on commission. A good man can make \$25.00 to \$75.00 per week. Address giving reference, **Smith, INDIA RUBBER WORLD.**

WANTED—A man who thoroughly understands the manufacture of Oil Clothing, to take full charge of a factory on the Pacific Coast. Address, **M. INDIA RUBBER WORLD OFFICE.**

WANTED—By a first-class firm an experienced reliable salesman on Mechanical Rubber Goods, for New York and vicinity. Address **RUBBER, INDIA RUBBER WORLD.**

A YOUNG MAN who has had ten years' experience as salesman on the road desires a position as salesman in some first-class store or on the road. Best of references. Address, **Push, INDIA RUBBER WORLD.**

WANTED—An experienced travelling salesman for a rubber manufactory of druggists' sundries. Address **S. F., INDIA RUBBER WORLD. (Sept.)**

SALESMAN—With established trade in mechanical rubber goods, desires to make a change. First-class references. Address **A1, INDIA RUBBER WORLD. (Sept.)**

WANTED—By a man thoroughly posted in the manufacture of rubber boots and shoes, etc., a position as foreman of mixing and calendering—is capable of making the varnish, etc. Best of references as to ability and success in the past. Address **WILL., INDIA RUBBER WORLD. (Sept.)**

AN EXPERIENCED RUBBER RECLAIMER who thoroughly understands the chemical process desires a position. Address "RECLAIMER," **INDIA RUBBER WORLD. (Sept.)**

MACHINERY WANTED—A rubber press 40x40, one 20x20 and one small rubber grinder-plain. Address, stating prices, **JNO. D. CARSON, 53 Hart Ave., Trenton, N. J. (Sept.)**

MACHINERY WANTED—One small rubber grinder, one tubing machine, one small vulcanizer and one screw press 36x36. Address **H. L. SMITH, 27 Hart Ave., Trenton, N. J. (Sept.)**

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A Review of the Rubber Market.

ANIMATION has followed apathy in the rubber market. On the day after THE INDIA RUBBER WORLD went to press last month a vague idea got out that something was "wrong in rubber." It was reported that Vianna's acceptances had been protested and the bears were not slow to avail themselves of the fact. A large house immediately offered rubber to manufacturers at 73. The market became wild, and sales were made as high as 78 by brokers who did not know of the extreme offers. One lot after another was placed on the market both here and in London, until a price of 60 was found. From this the market reacted until 73 was named as the price, although it is doubtful if that quotation was genuine. Brokers think that 68 or 69 cents was the limit of the reaction from which it gradually sank back to 60@61 cents. An immense amount of rubber was sold, and it is said that 4,000,000 pounds changed hands. Manufacturers were so pleased with the break that they bought largely and are now well supplied. One mill, it is reported, has a full year's supply in store. The condition of the market at present is not strong.

Manufacturers are well supplied and high figures will not tempt them to add to their holdings. The rubber they have obtained is of the best quality, and well dried out, and new arrivals will be a drug. Again, a large holder with 1,500,000 pounds has not disposed of his stock, which he obtained at much higher prices. He is strong with plenty of that nervous force that is essential to the speculator, and believes in higher prices. Should he for any reason, however, conclude to unload at present, the market would hardly take his rubber except at a sharp break. This is now the chief factor in the market. Until this factor assumes more definiteness it is believed that it will be a dull, sagging market. Centrals are in light supply. Nicaragua scrap is held at 45 cents with reluctant sellers, some large sales of Africans have been made, Benguela ball being shipped out in more than average quantities. The demand for these sorts continues very fair. There is a good inquiry for Tunos but there are none in store. The last price for this sort was 16 cents. Before when such a scarcity occurred they opened up 10 cents higher. It is believed that 20 cents will now be readily obtained on new arrivals.

The arrivals at Pará have been up to expectations, 480 tons since September 1. The river is high and there is no difficulty in navigation the length of the Amazon.

Communication with Pará is faulty on account of the land lines working badly and cables are mixed and are believed to have been delayed. Prices range according to them, between 2950 and 3050 milreis for Islands and 3150 and 3250 milreis for Up River with exchange at 15½@15¾ pence.

The arrivals since August 15 in New York have been: by steamer *Seguranza*, 90 tons Pará; by the *Gregory*, 20 tons Pará and 20 Cauchó; by the *Therisina*, 70 tons Pará and 30 Cauchó; by the *Alliança*, 220 tons Pará.

Afloat there are: Steamer *Justin*, 204 tons Pará and 10 Cauchó; by the *Vigilância*, 261 tons Pará and 20 Cauchó, and one steamer for Europe with 120 tons.

Mail advices from Liverpool dated August 31 give stocks of Pará at 603 tons against 66 tons last year. At the commencement of the break prices were 3s 2½d and 700 tons were sold on declining prices until 2s 5d was reached. The market reached to 2s 7d. In Ceará nothing was done. Stock 199 packages. Something has been done in Peruvian; nothing in Mangabeira. In Africans there was a good demand especially for low grades, stock 855 tons. Quotations were Gambia 1s 6d; Sierra Leone 1s 8d; Thimbles 1s 5d; Congo Ball 1s 6d; Tongues 1s 5½d; Cameroon 1s 5d. The English market on September 12 was 2s 8d.

There is a much better feeling among dealers in all sorts of rubber goods. Here and there is a manufacturer with a large

surplus of rubber on hand whose interests would have been in higher prices both in a positive or a negative way. There will now be no advance in the price of rubber goods and very probable no decline, as the drop in crude will now allow a better average which is claimed to be as necessary to obtain a reasonable profit. Mechanical goods are in the main dull. There is little demand for packing or belting and the season for hose. An excellent demand has sprung up for rolls for paper mills, and large orders are being shipped. This has been the case for some time and will probably continue. As stated elsewhere the demand for jar-rings this season has been phenomenal, and it is surprising what an excellent quality of goods has been made for this trade by some of the large manufacturers. Clothing is in good demand. There will be many new novelties this season, specialties being made in the most approved styles for hats, overgaiters, etc. The trade in the South is constantly improving, more goods being used each year. The South has more rainy weather than any other section, and it only requires a little missionary service to build up a large trade. In the West there is a good demand.

Transactions in rubber shoes are becoming large. During the summer, when rubber was so high, manufacturers were not over anxious to fill orders, but since the decline there is a different state of affairs. Details of orders are being called for and goods are being made up and despatched during the season of low freights with more than usual activity. All the mills are busy and are expected to continue so. It is not thought that prices will be reduced, as there is a greater unanimity of feeling on this subject among the different makers. This good feeling is becoming so pronounced that newspaper reports of "trusts" are continually cropping out; which would have more of a semblance of truth in them if they could reconcile the fact that two of the presidents of the largest companies reported in the combine were not so far apart on their vacations as to make it hard to believe that they have been in conference.

Simpson & Beers, New York, report a limited demand for India rubber paper and not a large supply. Out-of-town banks are taking it at 6@7 per cent.

The statistical position of Pará in New York is thus reported, for July and August:

Stock of Pará here June 30,	about	3,300,000 lbs.
Receipts " " July and August	"	1,284,000 lbs.
Deliveries " " July and August	"	2,804,000 lbs.
Stock " " August 31, 1891,	"	1,780,000 lbs.
Stock " " " " 1890,	"	450,000 lbs.
Stock " " " " 1889,	"	1,300,000 lbs.

Prices for July.

	1891.		1890.		1889.	
	Fine.	Coarse.	Fine.	Coarse.	Fine.	Coarse.
First.....	81	51	91	68	63½	40
Highest.....	81	52	92	68	63½	40
Lowest.....	77	47	91	66½	62	38
Last.....	79	50	91	66½	62	38

Prices for August.

	1891.		1890.		1889.	
	Fine.	Coarse.	Fine.	Coarse.	Fine.	Coarse.
First.....	79	51	91	66½	62	38
Highest.....	79	51	96	68	62	39
Lowest.....	61	40	90	65½	60½	37
Last.....	62	41	96	68	62	39

The world's stock of Pará rubber September 1 was 3184 tons against 3816 tons August 1, 1891, and 1651 tons September 1, 1890, and 2600 tons September 1, 1889. Of this England held 1200 tons against 281 a year ago, United States 742 tons against 131 tons, and at Pará 150 tons in first hands or 785 in all. On that date there were afloat for the United States 410 tons, and for England 120 tons. Continental stocks were 100 tons. Deliveries for the month were 1700 tons.

The latest New York quotations are:

Para, fine, new.....	60-61	Tongues.....	20-35
Para, fine, old.....	64-65	Sierra Leone.....	27-40
Para, coarse, new.....	40-41	Benguela.....	42-43
Para, coarse, old.....	45-46	Congo Ball.....	35-37
Cauchó (Peruvian) strip.....	39½-40	Small Ball.....	35
Cauchó (Peruvian) ball.....	48-50	Flake, Lump and Ord.....	72-25
Mangabeira, sheet.....	35	Mozambique, red ball.....	
Esmeralda, sausage.....	48-50	Mozambique, white ball.....	
Guayaquil, strip.....	35-37	Madagascar, pinky.....	50-51
Virgin Scrap.....	—	Madagascar, black.....	40
Cartagena, strip.....	28-30	Borneo.....	28-43
Nicaragua, scrap.....	44-45	Gutta percha, fine grade.....	140@150
Nicaragua, sheet.....	42-43	Gutta percha, medium.....	100
Guatemala, sheet.....	35-38	Gutta percha, hard white.....	100
Thimbles.....	40-41	Gutta percha, lower sorts.....	60-83

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